LONDON

JOURNAL OF MEDICINE,

A MONTHLY

Record of the Medical Sciences.

OCTOBER 1849.—No. X.

ORIGINAL COMMUNICATIONS.

ON PERICARDITIS.

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THE following paper is designed to render our knowledge of Pericarditis more exact, and to bring forward some points in reference to that disease, not dwelt upon by other observers.

Position of the Heart in Health. In order to appreciate the exact changes which take place in the Position of the Heart, and in the superficial outlines of the pericardial sac, in Pericarditis, it is necessary to know the precise position of the heart in health. This knowledge may be readily attained by the aid of the accompanying diagrams.[1]

The heart and pericardium, in health, are in immediate contact with the walls of the chest, over a space limited to the right by a line drawn through the centre of the lower half of the sternum; to the left by a line within the nipple; above, by the fourth left costal cartilage; and below, by a line drawn outwards from the lower end of the sternum. Over the superficial cardiac region, just indicated, there is absolute dulness on percussion, and complete absence of vocal resonance, and of the respiratory murmur; the heart's sounds are there loud, ringing, and clear, and the heart's impulse is to be felt there, if anywhere. The perpendicular diameter of this region is usually from two to two and a half inches, and its horizontal diameter from two and a half to three inches. In the robust, the lungs are ample, and cover a large portion of the heart; consequently the region in question is comparatively small, the heart's impulse is generally feeble, often imperceptible, and the heart's sounds are dull and heard only over a comparatively small space. In the weak,

[1] These diagrams were made by the aid of a tracing frame, suggested to me by my friend Dr. Hodgkin. This frame is described in my paper on the Position of the Internal Organs, contained in vol. xii of the *Provincial Medical Transactions*. I may be allowed to say, that these diagrams, and the communication just quoted, owe their value to the exactness with which the observations were made and depicted, both in life and death, in health and disease, by the aid of the tracing-frame referred to.

on the other hand, the lungs, being small, cover only a small portion of the heart; the region in question is consequently large, the heart's impulse is extensive and strong, and the heart's sounds are clear, sharp, and loud, and are usually heard over the whole chest, being readily conducted to the surface through the smaller and denser lungs. It is manifest from this, that the apparent strength of the heart's action is often in the inverse ratio of its real strength. If the cardiac region, where there is nothing but heart, be small, it is no indication that the whole heart is small. Indeed, in the robust, the heart, as well as the lungs, are larger than they are in the weak; but the lungs are so much larger in the former, that they cover a much larger portion of the heart. This point is illustrated, in a very interesting manner, in persons affected with Laennec's emphysema or bronchitis. In such cases, not only are the lungs unusually and universally enlarged, but the heart is unusually enlarged also; yet, notwithstanding its greatly increased size, a small portion of the heart only is uncovered by lung.

I shall throughout this paper, in referring to the region of which I am now speaking, where there is nothing else but heart, term it the cardiac region. It is over the cardiac region that we discover the earliest signs of Pericarditis; and, when we examine a patient to find out whether he has or has not that disease, it is of the utmost importance to bear in mind the exact seat, form, and size, of the cardiac region,

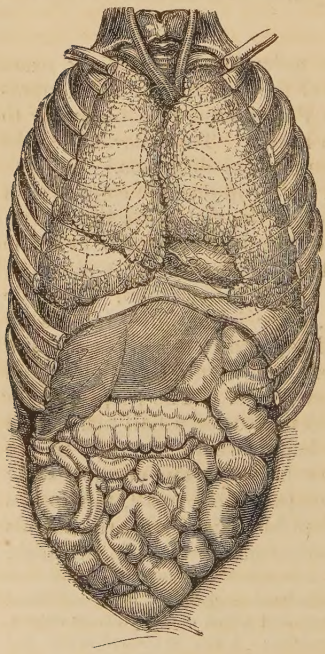

Fig. 1. Superficial view.

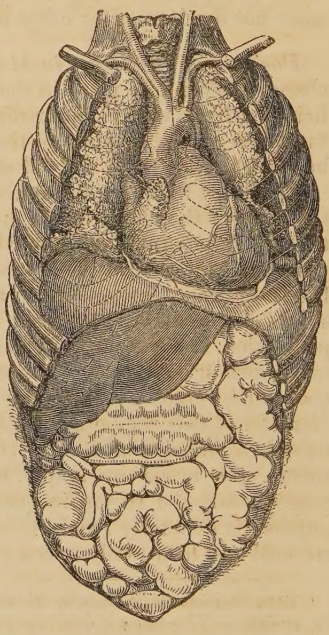

Fig. 2. Deep view.

Position of the Internal Organs in a healthy adult male.

and the possible variations of that region in health, and in the different forms of visceral disease.

In health, the lower end of the sternum indicates the meeting point, where the heart, the right lung, and the liver, come in contact; the diaphragm, pleura, and pericardium, being alone interposed. I ascertained that this was so in more than 119 persons, in none of whom could I detect disease either in the lungs or the heart: these persons varied from each other in sex, age, and in general health; some of them being robust, and some feeble. In all of these persons, the right boundary of the cardiac region was immediately behind the centre of the lower half or third of the sternum, and the lower boundary was indicated by a nearly horizontal line, drawn from the lower end of the sternum to the upper edge of the sixth rib. The variation in the outlines of the cardiac region takes place in the upper and in the outer or left boundaries. In the robust, the upper boundary is usually behind the space between the fourth and fifth costal cartilages, and the left boundary is from two to nearly three inches from the centre of the sternum. In feeble persons, the upper boundary of the cardiac region is often as high as the third costal cartilage, and the outer boundary may extend to the left nipple.

In the majority of persons, especially of those dwelling in towns, the upper boundary of the cardiac region is on a line with the fourth costal cartilage, and its outer boundary is within the left nipple, or about three inches from the middle of the sternum. In these persons, the left boundary is usually indicated by the impulse of the apex of the left ventricle, which is commonly felt between the fifth and sixth ribs, sometimes between the fourth and fifth. During the diastole of the heart, the margin of the left lung is interposed between the left ventricle and the thoracic parietes; but during the systole, the apex moves forcibly forwards, and to the left, pushes outwards, and from before it, the interposed portion of lung, and impinges upon, and elevates the parietes. It may be observed, that in most persons, the impulse of the apex is stronger towards the end of each expiration; and, in some, that impulse can then only be felt; this is due to the expiratory diminution of the thin couch of lung which usually shields the left ventricle from the parietes. It is well to bear in mind, that in most persons, excepting during the periods now stated, it is the right ventricle only which is in contact with the parietes. The diffused and slow impulse which is often felt over the lower half of the sternum, and the adjoining left costal cartilages, is entirely due to the systole of the right ventricle. In the first stage of Pericarditis, before the effusion is considerable, the friction sounds are entirely due to the impulsive and gliding motions of the right ventricle; excepting during the instantaneous systolic blow and brush of the apex upon the parietes, when the systolic friction sound of the left ventricle is also heard.

In the robust, the impulse of the apex is seldom perceived; the right ventricle is usually alone in contact with the parietes, and its diffused impulse may generally be distinguished by the ear, and sometimes by the hand, over the left fifth and sixth costal cartilages. In the feeble, the lungs, being comparatively small, are withdrawn to some extent from between the heart and the parietes; and, in addition to the right

ventricle, a portion of the ear of the right auricle, and a part of the left ventricle, are immediately behind the walls of the chest. In such persons, the impulse both of the apex and of the right ventricle is unusually strong. In some persons, who are feeble, wasted, and confined to bed, whose lungs and heart are free from disease, and in whom respiration and circulation are feeble, a still larger portion of the heart is uncovered by the lungs; the great vessels come in contact with the upper part of the sternum, the right auricle is exposed by the withdrawal of the inner margin of the right lung to the right of the sternum, and the left ventricle is to a moderate extent in contact with the ribs and intercostal spaces. In such, the impulse, both of the left and right ventricle, is extensive, sharp, and strong; and, in addition to the systolic impulse, a second or diastolic impulse is felt between the second and third, and sometimes between the first and second costal cartilages. This second impulse is neither more nor less than a sign, that the upper part of the right ventricle, and the origin of the pulmonary artery, over which it is felt, are in contact with the walls of the chest. This diastolic impulse, which is synchronous with the second sound, is a physiological and not a pathological phenomenon, and is due, I believe, to the sudden return forward of the walls of the right ventricle, and of the origin of the pulmonary artery, immediately after the systole; the parts in question then impinge with a short, sharp tap on the left second and third cartilages, and on the space between them. I have been thus exact in tracing the varieties in the extent to which the surface of the heart is exposed behind the walls of the chest in different persons, as in each of them there would be a distinct starting point in a case of Pericarditis. Besides this, the friction sounds would, at the outset, be heard more extensively, and there would be less difference between the normal outline of the cardiac region, and the outline of the pericardium distended by effusion, in those cases where the surface of the heart is more extensively exposed.

When the lungs are large, and the exposed portion of the heart is small, the extent to which the heart is screened by the lungs from contact with the walls of the chest is considerable. If the lungs, on the other hand, be small, the extent to which the heart is exposed being considerable, a small portion only of the heart is covered by lung.

In examining a case of Pericarditis, it is well to know not only the position of those parts of the heart which are in immediate contact with the walls of the chest, but also the position, in relation to the parietes, of those parts also which are usually covered by lung. The medical man, when he places the stethoscope over the heart, ought to be able, in fact, to say over what particular portion he places it.

The position of the great vessels is easily remembered. The aorta, the central vessel, lies exactly behind that part of the sternum which is above the third cartilage; the pulmonary artery is situated just to the right of the same portion of the sternum, and the vena cava just to the left of it. The right ventricle lies immediately behind the lower half of the sternum, and the left costal cartilages from the third to the sixth; the right auricle, to the right of the ventricle, is behind the sternal half of the right costal cartilages from the third to the sixth, and its appendix lies across the sternum, narrowing from right to left, just

below the third costal cartilages; the small portion of left ventricle which is in front, is just to the outside of the right ventricle,

The auricular border of the right ventricle, commonly called its base, crosses the sternum in an oblique line, from the left side of it at the third costal cartilage, to the right side of it at the lower end. As the most early, severe, and frequent seat of Pericarditis is immediately along the course of this line of the right auriculo-ventricular junction, and over the right ventricle to the left of it, and the right auricle to the right of it, it is very important to have clearly in the mind the position of the parts in question.

Displacement of the Heart by Disease. Should the heart, when displaced by disease, be affected with Pericarditis, the friction sounds, and other indications of the disease will necessarily be present, not over the usual, but over the actual situation of the heart. In such cases, if we would ascertain the presence of Pericarditis, we must examine the heart at the seat of its displacement.

In emphysema, the lower boundary of the heart, as well as that of the lungs, is unusually low; and the heart, although enlarged, is covered to an unusual extent by the dilated lungs. The cardiac region, that is to say the exposed portion of the heart, is consequently remarkably small and low. The exposed portion of the heart, instead of being behind, and to the left of the lower half of the sternum, is completely screened by lung from the sternum, and is seated behind, below, and to the left of the xiphoid cartilage. I possess the notes of a case of emphysema, in which Pericarditis was detected by the presence of friction sounds behind the xiphoid cartilage, and the costal cartilages to the left of it.

In peritonitis with great abdominal distension, the diaphragm being pushed upwards, the cardiac region is unusually high; indeed its lower boundary, instead of being on a line with the lower end of the sternum, may be an inch higher. Should friction sounds from Pericarditis be present in such cases, their situation, even at the outset of the disease, will be unusually high.

When there is extensive effusion into the left pleura, the fluid pushes the heart over to the right of the sternum, the displacement being proportional to the amount of effusion. When the fluid disappears, the heart gradually resumes its normal position. If, after the disappearance of the effusion, the left lung fails to resume its functions, and remains condensed and unexpanding (owing, perhaps, to its being surrounded by a fibrous covering, and by strong intercostal adhesions), the heart, instead of remaining at its normal position, is drawn over unusually to the left, so that the impulse of the apex may be felt to the outside of the nipple. At the same time, the right lung, to compensate for the deficiency of the left, is enlarged, and encroaches to some extent on the left side.

Should the effusion be seated in the right pleura, the heart is pushed over unusually to the left. Should permanent condensation of the right lung be the sequel of the disappearance of the fluid, then the heart will be drawn over to the right. Indeed, in some such cases, the heart is seated behind, and to the right of the sternum; and the left lung, amplified for compensation, encroaches on the right side.

From whatever cause either lung is condensed, whether as the sequel

of phthisis with cavities, or of pneumonia, the heart is drawn over to the affected side; this side is also encroached upon by the opposite lung, which is itself usually enlarged, to compensate for the impaired function of the other.

Movements of the Heart. It occurred to me, that it would give additional precision to the knowledge of the friction sounds excited over different parts of the heart in Pericarditis, if we knew accurately the exact motion of each part of the heart during its systole and diastole. In order to ascertain this, I rendered an ass unconscious by injecting into its veins the wourali poison, with which I had been kindly favoured by my distinguished friend, Mr. Waterton. I then kept up artificial respiration, and exposed the heart by removing the ribs. In order to see the exact motion of each part of the heart, I thrust pins into it in different directions, and then observed the various movements. I have given a detailed account of that experiment in my paper "On the Position of the Internal Organs" (*Provincial Medical Transactions*, vol. xii); and I subjoin a summary of those observations.

The greater part of the anterior surface of the heart, both ventricular and auricular, has a diagonal gliding or friction movement, namely, during systole, from right to left, and from below upwards. The movement from right to left has, as it were, its pivot or hinge in the line of the superior and inferior venæ cavæ; and that from below upwards, has its hinge of movement in the pulmonary veins; the vertical axis, on which the horizontal movements turn, runs through the base of the right auricle; and the horizontal axis, on which the vertical movements turn, passes along the base of the left auricle.

During the systole, the right ventricle becomes narrower, flatter, and shorter. The lower border of the right ventricle and the outlet at the pulmonary artery, gradually approach each other during the systole; the walls everywhere move from below upwards, with a diagonal movement from right to left, until within about half an inch of the pulmonary artery; there the walls are stationary; between that point and the artery they move from above downwards. The pulmonary artery is itself dragged downwards about a quarter of an inch by the neighbouring descending fibres of the right ventricle. The right auricle, previously flaccid, becomes gradually distended during the ventricular systole; the whole auricle becomes wider, and its ventricular margin moves about half an inch from right to left; the auricular portion, before scarcely perceptible, becomes swollen, and advances boldly and rapidly forwards, and from right to left, for the extent of about two-thirds of an inch; and the tip of the right auricular portion, which, at the beginning of the systole, is behind the right margin of the sternum, moves over, during the systole, to its left margin.

The general systolic movements of that part of the left ventricle which lies to the outside of the right ventricle, are also from right to left, and from above downwards. There is, however, a singular diversity in the movements of the part in question; while the apex of the left ventricle moves forwards, upwards, and from right to left, a small portion of that ventricle contiguous to the apex moves from left to right, dragging with it the contiguous portion of the right ventricle, while the two auricular thirds of the ventricle go from right to left. The aorta, like

the pulmonary artery, descends about a third of an inch during the systole.

From this it is to be observed, that the whole of the anterior portion of the heart, and the great vessels, have a gliding or friction movement during both systole and diastole,—that, during the systole, the anterior walls of the heart move diagonally from below upwards, and from right to left, the horizontal movement of those portions of the right auricle and ventricle near their junction, and of the auricular appendage, being by much the most extensive,—and that the aorta and pulmonary artery descend during systole, and ascend during diastole. In short, the various cavities in part exchange places during the systole and diastole; during systole, the ventricles empty themselves, the auricles and the arteries become more full, and where they adjoin the ventricles, both the auricles and the arteries occupy a portion of space previously occupied by the ventricles; during the diastole, the ventricles regain their position, and the auricles and arteries go back to theirs.

For a further description of the interesting phenomena in question, I refer to my own experiment just quoted, and to the valuable report of the Committee of the British Association (composed of Dr. C. J. B. Williams, Dr. Todd, and Dr. Clendinning), on the Movements and Sounds of the Heart.

Artificial Distension of the Pericardium, compared with Morbid Pericardial Effusion. Pericardial effusion being one of the earliest results of Pericarditis, I felt anxious to study, on the dead body, the effect of pericardial distension on the situation and size of the pericardium and of the heart, and on the position of the surrounding organs.

With this view, I imitated pericardial effusion, by injecting into the healthy sac as much fluid as it would hold.

M. Piorry thus describes the difficulties which he experienced when he attempted artificial distension of the pericardium: "Quelques essais tentés sur le cadavre, dans l'intention de simuler des maladies de l'enveloppe membraneuse du cœur, n'ont pas réussi. Des gaz pénétraient par les incisions que nous faisions aux parois costales; les injections se faisaient mal; elles pénétraient quelquefois dans les plèvres; on ne pouvait, après les avoir faites, boucher exactement l'ouverture artificielle qu'elles avaient nécessitée; lors même qu'il aurait pu en être ainsi, l'air qui s'était introduit dans les parties mises à découvert aurait donné lieu à des résultats qui ne pouvaient représenter l'état du péricarde avant l'ouverture du thorax." (*De la Percussion*, p. 135.) In a later work (*Du Procédé Operatoire*, pp. 114) he describes the more successful results of his attempts to inject the pericardium, and impresses on the student of chest-disease the importance of repeating for himself the experiments on the dead body.

Whoever is desirous of putting this valuable advice into practice, will find that the pericardial sac may be artificially distended with perfect facility, if he make an opening into the free pericardium, just large enough to admit the injecting tube; thrust a pin into the membrane at each side of the opening; and then tie in the tube by passing a thread round the opening, just beyond the pins. The pericardial sac may be conveniently opened for injection, either from below, before the chest is opened, through the central tendon of the diaphragm; or, after the removal of the sternum, through the anterior wall of the sac.

The healthy pericardium, when the size of the heart is normal, is incapable of holding a large amount of fluid.

In a boy, aged 6		the pericardium, injected to distension, held	6oz.
——— 9. Heart, $3\frac{3}{4}$oz. in weight			6
——— 13. ——— ———		about	6
In an adult male —— 12oz.	Right cavities distended held ....15oz. / Left ....$10\frac{1}{2}$	Pericardium distended held.....	15
In a man, aged 50 —— 13oz.		———	22
In an adult female, whose heart was enlarged		———	26

From these and other observations, it may be inferred that in the

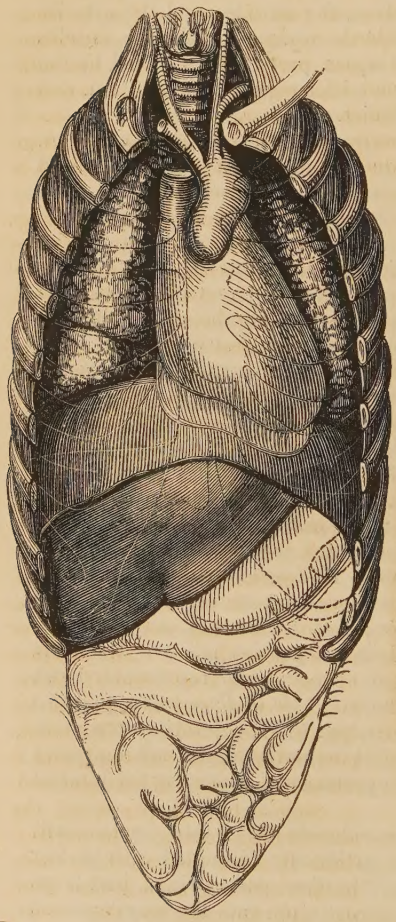

Fig. 3.
Pericardial sac not distended.

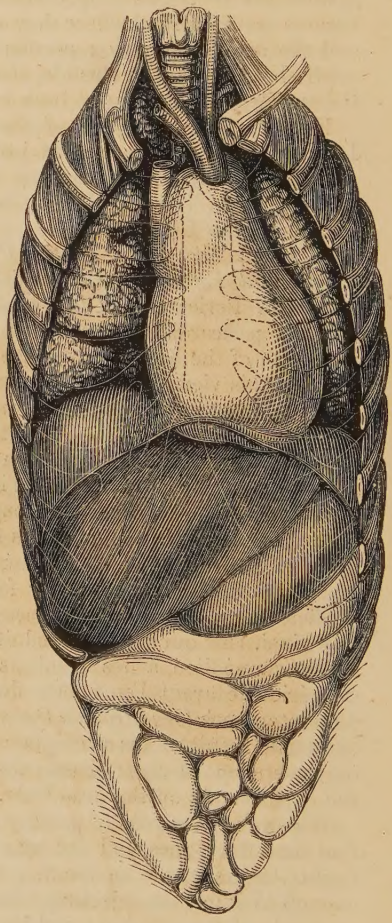

Fig. 4.
Pericardial sac distended.[1]

[1] The lines indicating the margins of the lungs are hypothetical.

adult, when the heart is healthy, the pericardium, when fully distended, can contain from 12 to 15 oz. of fluid. It is worthy of remark that the right cavities of the heart, in the adult male, when distended, hold the same quantity of fluid as the pericardium.

The quantity of fluid that can be injected into the healthy pericardium, falls very far short of the large quantity which it is sometimes found to contain in disease. There are several cases of Pericarditis on record, in which three pints were found in the sac; indeed Corvisart, in his commentary upon Avenbrugger, states that he has found in it seven or eight pints! (Dr. Forbes' translation, p. 57). It is therefore manifest that, not only is the pericardial fluid greatly increased in some cases of Pericarditis, but that the sac itself is, in those cases, very greatly enlarged, and altered in shape. In order, therefore, to understand the physical effects of pericardial effusion, it is not sufficient to observe the effect of artificial distension, but it is also necessary to notice the increased distension which supervenes when the disease is of some standing. During the early stages of Pericarditis, the comparison between artificial and morbid distension of the pericardium is exact.

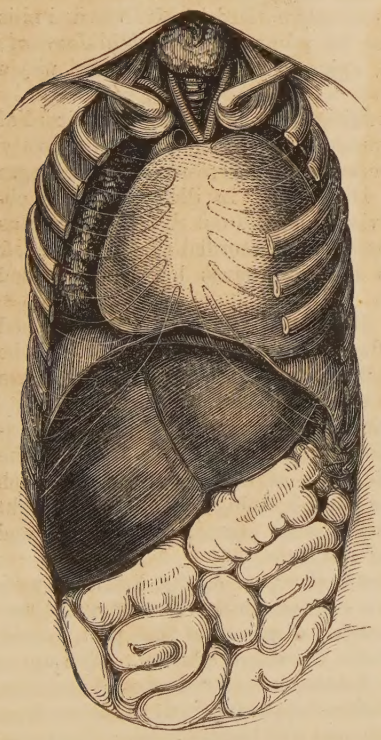

Fig. 5.
Pericarditis, with extensive pericardial effusion.

The accompanying engravings illustrate very exactly the effect of artificial distension of the pericardial sac. In the first view, fig. 3, the sac not being distended, fits closely around the various parts of the heart, so that the great vessels, the auricle, and the ventricle, can be readily distinguished through the fibrous membrane. The tendinous surface of the diaphragm, on which the heart rests, forms a plane inclined from behind forwards.

When the pericardium is distended, as in fig. 4, the whole sac becomes swollen and globular, or rather pear-shaped. The outlines of the heart itself, and of its various cavities and vessels, are no longer perceptible. The whole pericardial sac is enlarged, and it consequently encroaches upon, and, to some extent, displaces all the surrounding organs. The pericardium is most distended at those parts where it is most distant from its attachments to the heart, namely, at its lower or diaphragmatic portion, and at the left side, especially in the neighbourhood of the apex.

The form of the distended sac is peculiar. It is composed, as it were, of two spheres, one larger than the other, the smaller sphere resting as an apex upon the larger. The larger sphere encloses the heart itself, and is gibbous towards the left side. The smaller sphere envelopes the great vessels, and it presents three projections, one over each vessel; that over the aorta is most prominent, and lies immediately behind the upper bone of the sternum; that over the vena cava, just to the right of the sternum, is small; and that over the pulmonary artery, to the left of the sternum, is large.

The effect of the distension on the form and position of the central tendon of the diaphragm is marked and characteristic,—instead of being somewhat concave, and inclined from above downwards, it is perfectly convex and semi-globular on the under or peritoneal surface; that surface being more than an inch lower than it is when the sac is empty. The liver and stomach, where they adjoin the central tendon, are necessarily displaced downwards, in exact proportion to the amount of pericardial distension. This protrusion of the central tendon of the diaphragm into the abdomen accounts for the pain so frequently observed to be present in the epigastrium, especially when pressure upwards is made over that region; this was particularly noticed by Mr. Nairne in his communication on Pericarditis, in the 7th volume of the *Dublin Journal;* in ten out of eleven of his cases, epigastric pain on pressure was a marked symptom.

Avenbrugger first noticed the swelling in the præcordia in pericardial effusion; and Corvisart, in his commentary on Avenbrugger, correctly attributed this to the fluid of the pericardium depressing the diaphragm below the edge of the sternum. Dr. Forbes, in illustrating the observations of Avenbrugger and Corvisart, carries out those observations still farther, and accurately attributes the præcordial tumor to the left lobe of the liver, thrust forwards and downwards by the depressed diaphragm.

The great extent to which the liver and stomach may be pushed downwards by the pericardial sac, distended by morbid effusion, will be well understood by a reference to fig. 5, which was taken from a case in which the pericardial distension was very great.

The lateral expansion of the pericardium necessarily causes a corresponding lateral displacement of both lungs, where they overlap the heart. As the expansion of the left side of the pericardium is much greater than that of the right, the left side being free, while the right is attached to the venæ cavæ, there is much greater displacement and compression of the left lung than of the right.

Owing to the peculiar form of the upper part of the distended pericardium, where it forms as it were a swollen pouch over the great vessels, the lungs are, in the earlier stages, displaced at that part to each side, in a manner quite characteristic of recent effusion. The upper portion of the region of pericardial dulness has, in the cases in question, a peculiar peaked form; this is rendered apparent in fig. 4, taken from the artificially distended pericardium, and will be still farther illustrated in the figures from the living subject. It may be traced over the upper portion of the sternum, within an inch of its summit, and over the left second and third costal cartilages. The cause of this peaked

form is rendered evident by the diagram. The swollen pericardial sac, as it protrudes forward, comes in contact, at its most prominent part, with the sternum, and thus presses the lungs away to each side of it.

Corvisart, Piorry, and Hope, observed that the dulness on percussion in Pericarditis, is unusually high, extending to the upper portion of the sternum. M. Piorry has assigned a conical form, the base at the diaphragm, to the space of pericardial dulness. I am not aware that any observer has noticed the peculiar peaked form of the upper part of the region of pericardial dulness just alluded to. This peaked form is only present during the earlier stages of pericardial effusion. During the more advanced stages, if the effusion become more considerable than the pericardium can contain when artificially distended in health, the upper part of the region of dulness loses its peaked form, becomes more extended, and rises so as to be in some cases on a level with the left clavicle, as was accurately observed long since by Senac. This is well seen in fig. 5, taken from a case of extensive pericardial effusion of long standing. In this case it will be observed, that the anterior portion of the left lung is displaced completely backwards, so as to be almost quite hidden by the pericardium, while the compression of the right lung is considerable.

In the case just referred to, the pericardial sac is broader than it is long, instead of being, as in the cases of artificial injection, longer than it is broad. It is evident that the great expansion of the pericardium takes place laterally and to the left, and that the sac, as it enlarges, loses its symmetry. The great lateral increase of the pericardium is evidently due to the resistance offered to the expansion of the sac by the ribs and sternum in front, and by the vertebræ behind. The pericardium fills up the space between the sternum and the spinal column—the aorta and œsophagus, and at the upper part, the trachea, being alone interposed; and, as the pericardium cannot expand much in front or behind, and as its expansion above and below is limited by the upper ribs and the diaphragm respectively, the sac is compelled to expand sideways, that being the only direction in which there is no impediment. It is almost certain, that the distended pericardium exerts an injurious pressure on the thoracic aorta, as it lies interposed and compressed between the pericardium and the vertebræ. This view, which is forced upon us by the anatomical position of the parts, is supported by the frequency with which the lower limbs are cold and œdematous in Pericarditis with extensive effusion. It is probable, that an injurious pressure is sometimes exerted on the trachea at its bifurcation, and that this circumstance in part accounts for the extreme dyspnœa so frequently present in cases of Pericarditis.

The pressure of the distended pericardium being exerted in every direction, not only displaces, in proportion to the amount of distension, the adjoining viscera, but it also causes protrusion of the sternum, costal cartilages, and ribs immediately in front. If the amount of effusion be small, there is little or no protrusion; but if it be great, the protrusion is considerable. In extreme cases (such as that represented in fig. 5), the projection of the thoracic walls, caused by the distended pericardium, is very extensive—in fact, co-extensive with the sac. The thoracic projection is greatest from the fourth to the seventh left costal

cartilages, those parts being over the centre of the pericardium. The prominence, however, extends, in proportion to the distension, over the lower half or two-thirds of the sternum, that bone being in the young arched forwards more and more, from the upper to the lower extremity —over the left costal cartilages, from the second downwards, those cartilages being also all of them stretched further apart, and the intercostal spaces widened—over the costal cartilages to the right of the lower end of the sternum—over the left ribs, in the neighbourhood of, and outside the nipple, from the fifth or sixth to the seventh or eighth—and over the xiphoid cartilage, the epigastrium, and the seventh and eighth left costal cartilages. As the amount of effusion increases, the degree and extent of the thoracic prominence increase also; and as it diminishes, they diminish also. The progress of the case may be happily thus indicated to the eye, when, from the application perhaps of a blister, the extent of the effusion cannot be ascertained by percussion. I have, indeed, observed that the prominence over the cardiac region, which, in health, is usually greater than that over the corresponding region to the right of the sternum, may disappear altogether as the effusion diminishes. MM. Louis and Bouillaud give several cases, in which pericardial effusion caused thoracic prominence. It is probable, that the posterior curvature of the dorsal vertebræ is increased by the pressure of the distended pericardium backwards against the spinal column; and that the relief which some persons, suffering from pericarditic effusion, derive from the bent and forward position, is due to the increased space thus given to the pericardium behind.

The physical effect of the increased quantity of fluid in the pericardium upon the size and situation of the heart itself, its cavities and great vessels, is an important subject which did not escape the attention of the earlier observers. Senac (*Maladies du Cœur*, i, 148) remarks, that the water which fills the pericardium, neither permits the heart to dilate readily, nor to come in contact with the ribs; its cavities, being compressed by the surrounding fluid, cannot dilate sufficiently to receive the blood from the caval and pulmonary veins, and the volume of the heart is itself sometimes lessened. It therefore follows, as Lower had remarked, that in these cases the pulse is feeble or altogether imperceptible, and that even syncope may supervene.

These remarks, drawn, by observation, from living pathology, are illustrated by the effect of artificial distension of the pericardium on the size and position of the heart and its cavities. When I injected fluid into the sac, the heart was lessened by compression; the fluid contents of its cavities were in great part forced forwards into the arteries, and backwards into the veins; the lower boundary of the heart was elevated, and the whole heart and the great vessels were forced unusually upwards, evidently under the influence of the pressure of the liquid, which, lessening the volume of the heart, caused the whole organ to rise and approach more nearly to the seat of its attachment to the lungs and to the systemic vessels. During the injection, the fluid finds its way at first to the lower and back part of the pericardial sac, interposing itself between that portion of the sac, and the posterior wall of the left ventricle, gradually separating those parts farther from each other, and pushing upwards the ventricles, and downwards the central tendon of the dia-

phragm. As the sac becomes more and more distended, the fluid gradually rises, so as to cover the heart in front, separating successively the body of the left ventricle, the right ventricle, the right auricle, and the great vessels from the free pericardium. At length, when the distension is complete, it is probable that the left auricle, the base of the left ventricle, and the great vessels at their inlet or outlet, are alone in contact with the pericardium.

Although morbid pericardial effusion is in many respects closely imitated by artificial distension, yet the effusion is not attended throughout by the same effects as the distension. Indeed, it could not; for while, in artificial distension, we have to deal with a dead heart—in morbid effusion it is a living heart that is acted upon. The living, unlike the dead heart, being in continual alternating motion, offers by its muscular movements, a resistance to the compression of the pericardial fluid. It is to be borne in mind, that each ventricle, during its systole, not only propels the blood, the left through the systemic, and the right through the pulmonic arteries, capillaries, and veins; but that also, through those channels, and aided by the elasticity of the arteries, each propels the blood into, and fills the opposite auricle and ventricle. I found in the experiment on the ass, above related, that on compressing the aorta, less blood entered the right auricle at the very next beat; while the same effect was produced on the left auricle immediately after compression of the pulmonary artery.

Although the impulse of the heart is lessened in power by pericardial effusion, it yet retains considerable force, even when there is a great amount of effusion.

The changes in the position of the heart and the surrounding organs, progressively and gradually induced by artificial distension of the pericardium, may be accurately traced on the living subject of Pericarditis with effusion, during the progressive development of the disease.

Dr. Stokes made the important observation, "that in by far the greater number of our cases, the "friction" sounds were not audible beyond the actual region of the heart. This is a most striking character. I have often observed, that in moving the stethoscope little more than an inch from a situation where the sounds were loud, they totally ceased, although the contractions of the heart continued distinctly audible." ("On the Diagnosis of Pericarditis", *Dublin Journal*, iv, 56.)

As the friction sounds perceptible to the ear, and the vibrations and impulse communicated to the hand are, with few exceptions, only perceptible over the region of the heart affected with Pericarditis, we can gain a very accurate knowledge of the progress of the disease, by observing, during its successive stages, the varying seat of the friction sounds, the vibrations and the impulse of the heart, in connexion with the extent of pericardial dulness.

In the early stages of Pericarditis, when the amount of fluid in the pericardium is not materially increased, the heart and lungs retain their normal position; the extent of cardiac dulness is scarcely altered: the to and fro friction sounds, caused by the right ventricle, are heard over the lower half of the sternum and the adjoining left costal cartilages, and the rubbing sound of the left ventricle at the apex is heard only during systole, when the apex, pushing aside the interposed portion of

lung, rubs against the fifth rib and intercostal space; the vibrations are seldom perceived; the impulse of the heart is felt at the usual situation, between the fifth and sixth ribs. As the fluid progressively increases, it pushes aside the cardiac margins of the lungs more and more from before the heart, that organ being itself not yet notably elevated; the extent of pericardial dulness is materially increased; the right auricle is now exposed, and, while the to and fro friction sounds of the right ventricle are heard behind and to the left of the lower half of the sternum, those of the right auricle are heard to the right of that portion of the bone. The auricular tip of the right auricle, during systole and diastole, moves from side to side, first to the right and then to the left margin of the sternum, close to the third costal cartilages; and between those cartilages, the smooth, prolonged, equal double friction murmurs are distinctly audible. The friction sounds over the left ventricle are now usually both diastolic and systolic. The vibrations are sometimes communicable to the hand. The impulse at the apex is perhaps higher, and is more extensive than usual between the left costal cartilages.

When the pericardium is distended with fluid so as to push the heart materially upwards, the extent of pericardial dulness is still farther increased. The friction sounds, instead of being audible as low as the sixth costal cartilage and the lower end of the sternum, are only heard above the lower fifth of the sternum and the fifth costal cartilage. The vibrations are frequently felt by the hand, and occupy the same space as the friction sounds. The impulse of the apex is perceived over the fifth, instead of the sixth intercostal space; the impulse of the right ventricle is felt from the second to the fifth costal cartilages; and the peculiar sharp diastolic impulse may be perceptible both over the first and second intercostal spaces. When the effusion further increases, so that the ventricles are in great part separated by a layer of fluid from the parietes, the upper part of the right ventricle and the great vessels are still in contact with the first, second, and third intercostal cartilages and the spaces between them. The friction sound, the vibration, and the impulse, are now only to be perceived between the first and second, and the second and third costal cartilages.

When the sac is completely distended, and the surface of the heart is completely separated by the fluid from the parietes, then neither friction sound, vibration, nor impulse are anywhere perceptible.

As the fluid gradually disappears, and the heart comes again, by little and little, in contact with the parietes, the phenomena progressively re-appear, descending in the inverse order to that in which they disappeared and ascended; until at length, when the fluid is absorbed, the whole heart returns to its normal position, or, if enlarged, goes even beyond it. The friction sounds and vibrations, if present, are perceptible as low down as they were at first, and the impulse descends from space to space, so that at length the heart's apex beats as usual between the fifth and sixth ribs. As the heart, then, is pushed upwards by the increased effusion, the friction sounds, the vibrations, and the impulse are necessarily pushed up likewise; and as the heart descends, when the fluid diminishes, resuming its position, the friction sounds, vibrations, and impulse descend and resume theirs.

I believe I was the first to point out that the seat of the impulse is raised in Pericarditis with extensive effusion; and I here extract the passages relating to that subject, from my paper on the "Situation of the Internal Organs", published in the *Provincial Medical and Surgical Transactions* for 1844.

"In cases of pericardial effusion, where the heart is not enlarged, the volume of the heart is lessened and pushed upwards towards its point of attachment, and the ventricles being raised and seated behind the middle third of the sternum, and the third and fourth, or fifth costal cartilages.

"As the ventricles are raised, the seat of the impulse, caused by their contraction, is raised also. In a case in which the effusion was very extensive, the second and third costal cartilages, and the first and second intercostal spaces, protruded during the impulse of the ventricles, while the third intercostal space and the fourth costal cartilage fell slightly back, and the fourth intercostal space receded to a still greater extent. These movements of falling back below, while there was advance above, were visible, and gave the effect of undulation; while the upper part rose during systole, the lower part fell; towards the diastole, when the parts resumed their places, the lower parts rose while the upper parts fell. In another case, the impulse was unusually high, being seated between the third and fourth intercostal spaces; but the lower spaces and ribs did not fall back, the effect of undulation was not produced.

"As the outlines of dulness, due to effusion, diminished in the above cases, the seat of the impulse descended."

Dr. Taylor has noticed the connexion of the elevated impulse with considerable pericardial effusion, in the valuable series of cases of Pericarditis, published by him in the *Lancet* for 1845-46. In one case, (the seventeenth) he observed, that as the pericardial dulness diminished, the impulse at the apex fell from the fourth to the fifth intercostal space.

More recently this point has been noticed in the following words, by Dr. Walshe, in a Clinical Lecture on an interesting case of Pericarditis, published in the *Lancet* for Feb. 10, 1849, p. 143:

"Another singularly important sign of pericardial effusion (twisting upwards and outwards of the heart's apex in such manner, that the beat of the apex is felt and seen in the fourth instead of the fifth intercostal space, and on, or a little outside, instead of inside, the vertical level of the nipple) was clearly detected in Cradock; and that the elevation of the heart's point was the effect of the recent effusion (as in ordinary cases), and not of the old inflammation, was absolutely demonstrated by the descent of that point to the fifth intercostal space a few days later."

In the second of the two cases referred to in the quotation from my paper on the Internal Organs, the impulse of the apex and the right ventricle was seated between the third and fourth intercostal spaces, and was somewhat more to the left than usual at the apex; a circumstance pointedly noticed by Dr. Walshe, in his case in the quotation just given. In the first of my two cases, the impulse was only present in the first and second intercostal spaces, and was evidently due to the

movement of the upper part of the right ventricle, and, probably, of the pulmonary artery. In this patient, the fluid must have been in part interposed between the body of each ventricle and the free pericardium, thus shielding the parietes from the more extensive impulse.

The appearance of undulation, caused by the impulse over the first and second intercostal spaces, which was observed in the case just referred to, was noticed in the following words by Senac, one of the earliest writers on pericardial effusion:

"Parmi tant de signes incertains, j'ai cru en remarquer un qui les rendrait moins équivoques, s'il était bien constaté; il est d'autant plus facile à observer, que les yeux peuvent le saisir; on aperçoit très-clairement entre la troisième, la quatrième, et la cinquième côte, les flots de l'eau contenue dans la péricarde, lorsqu'il survient des palpitations; ce n'est pas qu'on entrevoie quelque mouvement semblable dans celles qui ne sont pas accompagnées d'une telle hydropisie; mais elles ne produisent pas un mouvement onduleux, et qui s'étende fort loin."

Dr. Latham, in his recently published Clinical Lectures on Diseases of the Heart, thus notices the interesting subject just referred to:

"In Pericarditis, while the præcordial region is dull to percussion, and the exocardial murmur is heard, an undulating motion often becomes visible to the eye in some of the spaces between the cartilages of the ribs on the left side. It has always been either between the cartilages of the second and third ribs, or of the third and fourth, or between both at the same time, that I have seen motion, and never in any other situation.

"So, too, in Pericarditis, while the præcordial region is dull to percussion, and a murmur is heard, a vibratory motion often becomes sensible to the touch in some spaces between the cartilages of the ribs on the left side. As I never saw the undulation, so I never felt the vibratory motion elsewhere than either between the cartilages of the second and third, or of the third and fourth ribs, or between the cartilages of both simultaneously.

"The vibration, I believe, is the more frequent of the two, and often occurs unaccompanied by any visible undulation. But the undulation was never apparent to my eye without my finger being able to detect a sensible vibration at the very same spot.

"Again where they do appear, it is not (as far as I observe) ever at a very early period of the disease. In Pericarditis (as far as I have observed) they never occur but as accompaniments of the exocardial murmur and the præcordial dulness. And further, when they do occur (as far as I have observed), they always appear later and cease earlier than these do."

These observations of Dr. Latham render it perfectly clear that the appearance of undulation cannot be due, as Senac had supposed, to the presence of fluid at its seat. The co-existence of friction sounds and of vibrations with the undulation, necessarily forbids the supposition that fluid was present; as the presence of fluid would have separated the two surfaces of the pericardium, and so extinguished the friction sound and the vibrations.

It is manifest, therefore, that the appearance of undulation, so often observed in cases of extensive pericardial effusion, is not due to the

reality of undulation from the presence of fluid, but to the slight and peculiar impulse between the cartilages of the first, second, third, or fourth ribs—an impulse due to the slight systolic shock of the upper part of the right ventricle, and which is usually followed, at the uppermost part, by the peculiar sharp diastolic shock of which I have spoken above at p. 895.

When the anterior walls of the heart are altogether separated from the free pericardium, neither impulse, undulation, friction sound, nor vibration, can be any longer perceived. How, indeed, can they, when the heart's surface is no longer in contact with the parietes? It is clear that if, by any means, we can, for the time, remove the fluid from between the roughened and inflamed pericardial surfaces, bring those surfaces again into contact, and so reproduce attrition between them, we shall again bring out the friction sound. This I have been able to effect in such cases, by exerting pressure upon the cartilages of the ribs and the spaces between them. The interposed layer of fluid is usually very thin, and I have found it to be readily displaced by means even of inconsiderable pressure. In order to diffuse the pressure, and so to prevent pain, I inserted a thin plate of wood into the large end of the flexible stethoscope, and I found that when, by careful manipulation, pressure was made with this plate, it excited no uneasiness, and it also, owing to the increased extent to which the surfaces were brought in contact, still further augmented the friction sound.

I found that, by means of pressure, I was not only enabled to bring out friction sounds, previously absent, owing to the interposition of fluid between the opposite surfaces; but that I was also able, in almost all cases where the friction sounds were present, to render those sounds louder and rougher. I wish particularly to call attention to the fact that exocardial murmurs can be heard with greater ease and clearness when pressure is applied over the region of the heart, and to demonstrate the value of the sign in question in the detection of Pericarditis. I shall take a future opportunity of returning to this interesting subject.

15, Lower Brook Street, London, September 1849.

CASES OF MESO-COLIC HERNIA.

By THOMAS B. PEACOCK, M.D., Physician to the Royal Free Hospital, etc.

Systematic writers, in enumerating the various causes of internal strangulation, usually refer to epiploic, mesenteric, and meso-colic Herniæ. The cases, however, which have been described under these names, have consisted most generally of strangulations of portions of the intestine through apertures in the epiploon, mesentery, or meso-colon.

Of affections of this description, a considerable number are on record. Among these may be mentioned—1. The case related by De Haen,[1] and made the subject of a graduation thesis by Knobloch,[2] in which a portion of ileum was strangulated in an aperture in the meso-colon of the sigmoid flexure. 2. The case of Saucerote,[3] in which portions of the cæcum and colon had passed through an aperture in the mesentery. 3. The instance related by Monro,[4] as having occurred to Dr. Rutherford, in which a portion of ileum was strangulated in an opening of the mesentery. 4. An example of internal Hernia, described by Rokitansky,[5] in which the cæcum was pushed from behind through an aperture in the mesentery of the lower part of the ileum. 5. A case referred to by Grosse,[6] as published by Dr. Davis, in which a portion of colon was strangulated in an opening in the meso-colon of the sigmoid flexure. 6. The case recorded by Mr. Ranking,[7] in which, part of the ileum having been torn from its mesenteric attachment, a loop of intestine became strangulated in the opening so produced. 7. That related by Dr. Hutton,[8] in which a portion of the small intestine was strangulated in an opening on the mesentery; and lastly, a similar case described by Mr. Phillips.[9] To these instances may be added one, probably of the same kind, related by Schroeder Van der Kolk,[10] and it would not be difficult to collect others. The cases referred to by Baudelocque,[11] Callisen,[12] Arnaud,[13] and Scarpa,[14] in which loops of intestines were strangulated through apertures in portions of epiploon or mesentery contained in hernial sacs, are also analogous.[15]

Displacements of this description, in which the intestines are not protruded from the abdominal cavity, cannot, however, properly be re-

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[1] Ratio Medendi, tom. iii, f. 359. Pars XI, cap. xv, s. II.

[2] De Entero-mesocolocele. Lugd. Bat.: 1797.

[3] Hevin. Mem. de l'Académie de Chirurgie, t. iv, p. 239. Paris: 1784.

[4] Observations on Crural Hernia, p. 12. Edin.: 1803.

[5] Medicinische Jahrbucher des Œst. St. 1836, quoted in Brit. and For. Med. Rev., vol. iii, 1837, p. 500.

[6] Path. Anat. 2nd edit., p. 596. Philadelphia: 1845.

[7] Med. Gaz. 1838. Brit. and For. Med. Rev. vol. vii.

[8] Trans. of Path. Soc. of Dublin. Dublin Journal, vol. xv, p. 294.

[9] Med. Chir. Trans., vol. xxxi, p. 14.

[10] Dissert. obs. varii argumenti. Groning.: 1793. Quoted by Ploucquet.

[11] L'art des Accouchements, t. i, p. 509.

[12] Acta Hafniensia, t. i, p. 164.

[13] Mem. de Chir., t. ii, p. 587.

[14] On Hernia, Wishart's Trans., p. 154, where the other three cases are also quoted. See also, Lawrence on Hernia, p. 630, 5th edition, 1838.

[15] Very recently, my friend and colleague, Mr. Gay, has mentioned to me a case of strangulation of a portion of intestine contained in an Umbilical Hernia, through an aperture in the omentum.

garded as Herniæ; but, in the form of disease which I am about to describe, an aperture exists in one of the layers of peritonæum forming the mesentery or meso-colon, and the intestines entering this aperture, and separating the two folds of which the meso-colon and mesentery are composed, form true ruptures, situated in a sac external to the abdominal cavity, and formed by the layers of peritonæum. This form of disease would appear to be of very unfrequent occurrence; indeed I am only able to refer to two examples of the affection, besides those which it is the object of the present paper to place on record. The cases alluded to, which are related by Sir A. Cooper,[1] I shall quote in detail.

The first case is one of mesenteric Hernia, which, we are informed, was found by Mr. Pugh in the body of a man, sent for dissection to St. Thomas's Hospital. "The man had been a patient in Guy's Hospital, under Mr. Forster, and had suffered the operation of amputation. He appeared about 55 years of age. When the abdomen was opened for demonstration, and the omentum and colon were raised, the small intestines did not appear; but in their stead, in the middle of the abdomen, was found a tumour, situated upon the lumbar vertebræ and extending down to the basis of the sacrum. When this tumour was opened, it was found to be a sac, containing all the small intestines but the duodenum. Mr. Pugh was so obliging as to give me the body for further examination. I found that the sac was formed by the peritonæum, which completely surrounded the intestines, except at the posterior part, where there was a small hole, by which the intestines had entered. Tracing the intestine from the stomach towards the anus, the beginning of the jejunum was found passing into the sac at the posterior part; and, by the same opening, the ileum passed out on the right side, and descending to the right inguen, it entered the large intestine in the usual manner. What effect during life this unusual position of the intestines had produced, I could not ascertain. Every inquiry was made, but nothing had happened during the time the patient was in the hospital, that could lead to a suspicion of any disease having existed in the abdomen. However, from the confinement the intestines had suffered within the bag, I should naturally be inclined to conclude, that the peristaltic motions of the bowels had been less free than usual, and that, from this state of intestine, frequent constipation would have arisen; but, if this was the effect, it had never gone so far as to produce inflammation, as the intestines did not appear thickened, and had not contracted any adhesions, either to the sac or to each other."

The second case related by Sir A. Cooper, is one of meso-colic Hernia, and is described as follows:—"On opening the abdomen of a subject brought for dissection, the omentum and large intestines being turned aside, a large tumour was discovered on the left side of the abdomen, its upper part resting on the left kidney, whence it extended downwards to the brim of the pelvis, its lower part lying in the fold of the sigmoid flexure of the colon. The large intestines took their usual course in the abdomen, excepting that the cæcum and beginning of the colon were placed nearer to its centre. On the left side, the colon was placed

[1] The Anatomy and Surgical Treatment of Abdominal Hernia. 2nd Edition, by Key, pp. 73, 74. These cases are illustrated by plates.

between the tumour and the abdominal muscles, and the swelling reached from the termination of its great arch to its sigmoid flexure. The duodenum, a small part of the jejunum, and the termination of the ileum, were the only portions of the small intestines which were visible. Upon examination of the tumour, it was found to contain all the small intestines which were not seen on first opening the abdomen, and the orifice by which they had passed into the tumour was situated on its right side. The orifice was more than sufficiently large to permit the passage of two folds of the intestines, even in their most distended state, and through it all the small intestines were readily drawn from the bag. The sac in which they were contained was formed between the laminæ of the peritonæum of the meso-colon, in the anterior layer of which, on the right side, was placed the opening by which the intestines had entered. The bag was sufficiently large to be capable of containing all the small intestines in a half-distended state. Two-thirds of the orifice were formed of peritonæum only, and one third was covered by a branch of the inferior mesenteric artery. The peritonæum which formed the sac, was somewhat thicker than that which was contiguous to the abdominal muscles; but, upon the whole, it had undergone less alteration, in that respect, than the degree of pressure which it had sustained would have led me to expect. When the intestines were very much distended with air or food, the opening into the sac was sufficiently large to allow of the escape of a part of them into the abdomen."

Of both these cases the preparations, though in a very imperfect state, are deposited in the museum of St. Thomas's Hospital. Somewhat analogous to these cases is one of epiploic Hernia, referred to by Blandin[1] and Jobert,[2] in which the whole of the small intestines were found to have passed, through the foramen of Winslow, into the posterior cavity of the epiploon, whence a piece of intestine had been protruded through an aperture in the transverse meso-colon, and had become strangulated. Rokitansky[3] also mentions having found a portion of intestine strangulated in the foramen of Winslow. These are all the cases, similar to those which I am about to relate, of which I have been able to obtain particulars. I shall now therefore describe the two examples of Meso-colic Hernia which have fallen under my own notice.

Case I. *Typhus Fever, with the characteristic eruption: death on the ninth day. Hernia of the whole of the small intestines, except the duodenum, between the layers of the meso-colon.*

Henry Morgan, aged 30, was admitted into the Royal Free Hospital on the 25th of April, 1849. He was taken ill on the 21st, with difficulty of breathing and pain in the chest. At the time of admission the tongue was white and moist; the skin was moderately warm; the pulse quick and feeble. He had much tremor of the extremities, and complained of pain in the loins and of thirst. His bowels had been freely relaxed after a dose of calomel. His habits were stated to be regular; but his calling, that of a musician in the practice of playing at public-houses, rendered this very doubtful. He was directed to take one

[1] Traité d'Anatomie Topographique, p. 442. Paris: 1828.
[2] Traité des Maladies du canal intestinal, t. i, p. 522, Paris: 1829.
[3] Handbuch der Pathologischen Anatomie.

ounce of the chlorate of potash mixture every three hours, and to have low diet.

26th. The pulse is quick and weak, and the skin warm and bathed with profuse perspiration; the tongue is covered with a thick brown-coloured, but moist fur; he is much excited, and talks rapidly; there is great tremor of the extremities; the bowels have not been relieved since yesterday. To add to each dose of the mixture, one drachm of the compound tincture of bark; to have beef tea and arrow-root.

27th. Last night he was extremely delirious, and to-day he continues very excited. There is great tremor of the limbs, and a very hurried manner of talking; the pulse is quick and feeble; the tongue is moist, but covered with a thick brown fur; the eyes are pale and glistening, and the pupils large and somewhat fixed. There is a copious eruption over the whole of the trunk, shoulders, arms, and thighs; it is not elevated above the surface, and generally fades on pressure, but there are a few spots, of a deep purple colour, which do not entirely fade. To have a blister on the back of the neck; the head to be shaved, and kept cool by the application of ice. To take a mixture containing five grains of the sesquicarbonate of ammonia and one drachm of the tincture of bark, in an ounce of infusion of serpentary, every two hours; to have four ounces of brandy during the day; a draught, containing half a drachm of the aromatic spirit of ammonia, the same quantity of the compound sulphuric ether, and half a grain of morphia, to be given at night, if the delirium continue.

28th. He slept at intervals last night, and was quieter and more collected when awake. To day there is less tremor, and he is also less excited. The pulse is 120, and feeble; the tongue is covered with a thick, dark brown-coloured fur, and dry; the conjunctivæ are somewhat injected, but the pupils act on the stimulus of light; there is some thrill in the temporal arteries; the bowels have been once relieved, and he makes water freely; the abdomen is flaccid and free from tenderness; the eruption is fully out and generally fades on pressure. The urine has a specific gravity of 1020, and is not albuminous. To continue the mixture and the brandy; to repeat the draught at night, and apply ice to the head.

29th. The tongue is dry, brown, and chapped; the pulse quick and weak. There is less tremor, but some torpor; he slept comfortably at intervals last night; altogether he seems better; the eruption is still out; the pupils are rather large, but act on the stimulus of light, though somewhat sluggishly; the bowels have been once naturally relieved. To continue the same treatment as before.

30th. Yesterday, a large patch of deep purple colour was noticed on the left buttock, and his symptoms changed for the worse. After the visit, he continued to get lower, became comatose during the night, and the skin was cool and bathed in profuse perspiration. The spot on the left buttock is surrounded by erysipelatous redness, and in places is quite black, and the integuments are there much loaded. The tongue is dry and brown, and the teeth covered with sordes; he breathes somewhat stertorously; the conjunctivæ are injected, and the pupils large and fixed, and he is in a state of extreme and general tremor. The bowels have not been relieved, but he has passed urine in bed: the eruption is

still out, and in part fades on pressure; the pulse is rapid and vibratory. He died at 4 P.M. this afternoon, or on the ninth day of the disease.

On *post-mortem examination*, the body was found covered with dark ecchymosed spots, which were most conspicuous in the dependant parts. On raising the calvarium, there was found an extensive effusion of fluid beneath the arachnoid, which elevated that membrane above the level of the convolutions; much fluid of a slightly opaque character was also found in the ventricles, and a large quantity escaped from the base of the brain and the spinal canal. The brain was somewhat soft, and the vessels, both of its substance and the membrane, contained much semi-fluid blood.

The Cerebrum weighed.....	53oz.	0 drachms, avoirdupois.
The Cerebellum	5	8
The Pons Varolii and Medulla Oblongata ..	1	0
Giving a total weight of.....	59	8

The lungs were free from adhesions; the right lung was congested posteriorly, as was also the left to a greater degree The bronchial mucous membrane was injected, and the tubes contained much spumous fluid of a sanguineous colour. The heart was large and flaccid, and the blood in its cavities was semi-fluid, and contained no coagula. The spleen was large, and so soft as to become pultaceous when handled. The kidneys were engorged. The liver was healthy, though somewhat congested. The mucous membrane of the stomach and duodenum was somewhat reddened. The small intestines were healthy, and the solitary glands and patches of Peyer in the lower part of the ileum were only detectable on careful examination, and presented no appearance of disease. The mesenteric glands were not enlarged.

The most interesting feature in this case was, however, the existence of a *meso-colic Hernia.*

On opening the abdomen, a portion of the liver, the stomach, and the transverse arch of the colon were exposed, but the small intestines were nowhere seen. There existed a small, but thick, band of adhesion between the commencement of the transverse colon and the right lobe of the liver, on the right side of the gall-bladder. At this point the colon made its turn to the left side, and thence passed down the middle of the abdomen to the brim of the pelvis, where it was suddenly deflected upwards, and passed to the usual situation of the commencement of the sigmoid flexure. The remainder of the canal pursued its natural course. None of the small intestines were visible on opening the abdominal cavity, but the portion of the colon, described as descending in the middle of the abdomen, was pushed forwards by a tumour situated behind it, which projected on each side (see fig. 1). This tumour was found to consist of a hernial sac, containing the small intestines, formed within the layers of the meso-colon. By drawing aside the descending portion of the colon, so as to expose the meso-colon, the tumour described was made to project on the right side of the intestine, and formed a mass the size of two large clenched fists. On tracing the colon from the caput cæcum downwards, a band of meso-colon was seen passing from near the termination of the ileum towards the middle of the meso-colon of the transverse arch; this band formed the right boundary of the

tumour, while its left side was bounded by the descending portion of the transverse arch of the colon. Below, the sac overhung the margin of the pelvis, and above, it was bounded by the transverse colon. On drawing the tumour from the caput cæcum, the portion of ileum passing out of the sac was brought into view. The point at which the intestine escaped was about two inches above the cæcum; the ileum was there firmly adherent on the under side, by old attachments, to the margin of the aperture; above, there was an opening with a concentric edge, through which the finger could be freely passed into the sac. From the upper side of the ileum, the mesentery was reflected into the meso-colon of the ascending portion and caput cæcum. Externally, the sac was somewhat opaque and much thickened, especially below, where it was adherent by several dense bands to the peritoneal lining of the brim of the pelvis; while, on the inside, it was smooth and glistening, though opaque. The whole of the small intestines, except the duodenum, were contained in the hernia; and on their being removed, the jejunum was found entering the sac at its upper and posterior side, while the ileum escaped from it at its lower and right margin. The sac was covered in most places by a moderate deposit of fat, through which the convolutions of the intestines could be seen. The omentum and mesentery were healthy, and the intestines presented no appearance of having been the seat of disease. At the distance of about eighteen inches above the termination of the ileum, there was a small diverticulum, about

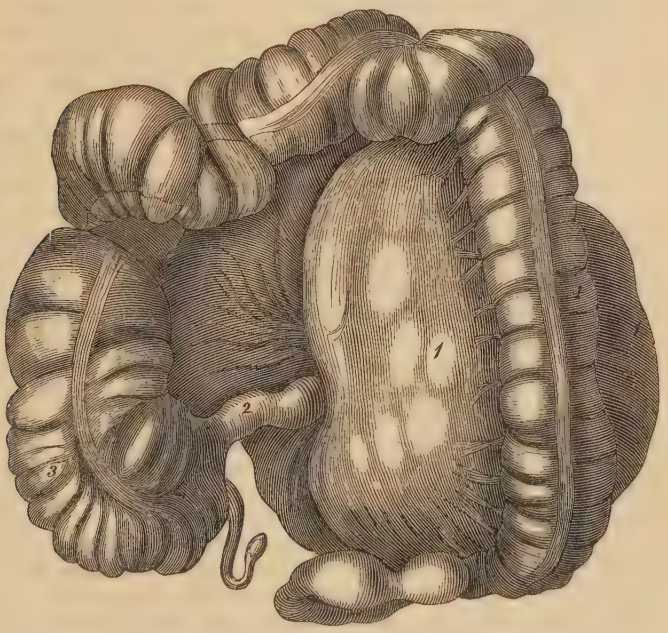

FIG. 1. 1, 1. The sac of the Hernia situated between the folds of the meso colon.
2. The lower portion of the ileum passing out of the hernial sac.
3. The caput cæcum coli. 4. The displaced portion of the transverse colon.

two inches in length, and of about one-fourth the diameter of the intestine.

In this instance, the symptoms during life, and the morbid appearances detected in the body after death, corresponded with the ordinary features of cases of typhus. The peculiar displacement of the small intestines was not productive of any symptoms of abdominal obstruction while the patient was under observation in the hospital; nor did it appear by inquiry after death, that he had previously suffered from any indisposition which could be ascribed to the Hernia.

In the following case the patient presented symptoms of ileus, and the small intestine, at its point of exit from the hernial sac, not only presented a considerable diminution of its calibre, evidently of long duration, but was the seat of active inflammation, which had proceeded to incipient gangrene.

Case II. *Symptoms of Ileus, fatal in forty-one hours: meso-colic Hernia, containing nearly the whole of the small intestine: acute inflammation and gangrene, commencing above a contraction at the point of escape of the intestine from the sac.*

Bryce Reid, aged 27, a carter, was seized, after returning to work from his breakfast on the 10th April, 1843, with severe pain in the stomach, and vomiting. He applied to a medical man in the neighbourhood, who gave him some medicine, and ordered an enema to be administered. He was admitted into the Royal Infirmary of Edinburgh the same evening, at about five o'clock; he then stated that his bowels had not been relieved since two o'clock on the preceding afternoon; he complained of pain in the stomach, and the abdomen was tender and tympanitic; he vomited all the ingesta, and also had cramps in the muscles of the lower extremities. Appropriate medicines were prescribed, and he was directed to have an enema. On the following morning he had obtained no relief to his sufferings; the bowels had not been acted upon, and he had urgent vomiting, the matters discharged being sometimes merely the food or drink which he had taken, and having, at other periods, a yellow colour and very fetid odour, like fæculent matter. The muscles of the lower extremities and the abdominal muscles were in a continued state of spasm, and the abdomen was extremely tender and tympanitic; his face was pale, and the expression of countenance anxious; the extremities were cool, and the pulse quick and weak. These symptoms continued throughout the day, and in the night he had two convulsive attacks, during which he was stated to have been insensible. He continued to vomit almost incessantly up to the period of his death, and had no evacuation from the bowels throughout his illness. He died at two o'clock on the morning of the 12th, forty-one hours after the commencement of the symptoms.

The *post-mortem examination* took place on the 14th.

On opening the abdominal cavity, the descending colon was found lying in front of the cæcum and ascending portion, while the whole of the front and left side of the abdominal cavity was occupied by a large tumour, through the thin walls of which the small intestines were observed, in a state of great distension, and of a deep purple colour. On close examination, this tumour was found to consist of a Hernia of the small intestines, within the folds of the left meso-colon. On dividing

the anterior layer of the sac, the whole of the small intestine, except the duodenum, was found to be contained in it (see fig 2). The jejunum entered above, then escaped again, and after forming a short loop, re-entered, and continued to occupy the sac, till the ileum passed out about two inches above the cæcum. The jejunum and upper portion of the ileum were only slightly reddened externally, though throughout much inflated; but, near the point at which the ileum made its escape from the sac, the coats of the intestine were intensely inflamed, livid, and almost gangrenous; and the mucous membrane in the corresponding situation was perfectly black. On drawing the small intestine from the sac, a constricted portion was exposed, situated about two inches above the ileo-cæcal valve; and the coats of the intestine at this point were much thickened. The inflamed portion commenced immediately above the seat of constriction, and corresponded to a sharp

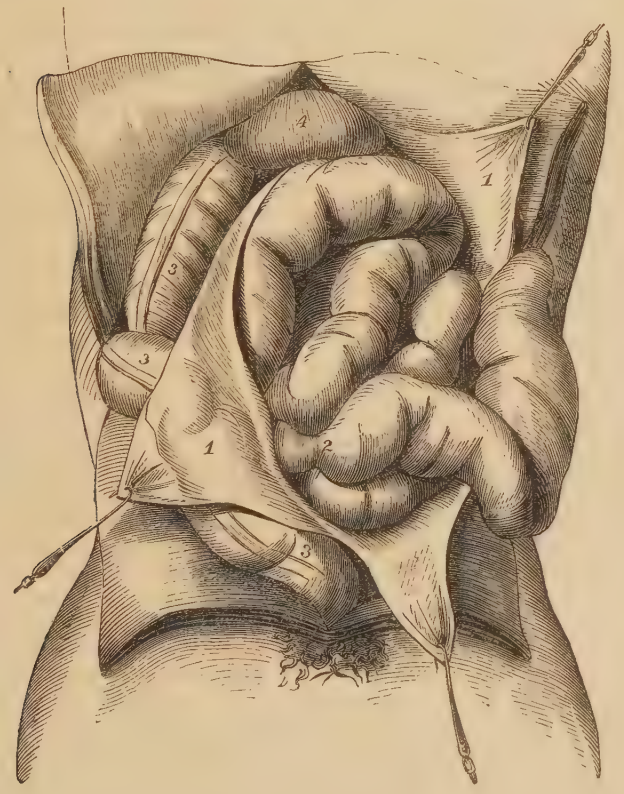

FIG. 11. 1, 1. The sac of the Hernia laid open and drawn back so as to expose the distended small intestines contained in it.
2. The portion of the ileum which was permanently contracted from the pressure of the crescentric edge of the opening into the sac.
3, 3, 3. The cæcum and colon. 4. The stomach.

margin formed by the edge of the meso-colon, beneath which the intestines had become herniated. The aperture into the sac was of sufficient extent, after removing the intestine, to admit the four fingers on the same plane; and its lower edge was thick, and apparently in part formed by one of the meso-colic arteries. The rupture was evidently of long standing, as shown by the existence of cellular adhesions between the crescentic edge and the jejunum above and the ileum below, and also by the permanent contraction of the ileum where it had escaped from the sac. On removing the whole of the small intestines, the form of their containing sac was very distinctly displayed: in front it was bounded by the expanded portion of the posterior fold of the left meso-colon; the pancreas and duodenum crossed its upper side; its right margin was formed by the descending colon and its anterior fold of meso-colon; and on the left side and below, it was continued into the peritonæum lining the abdominal muscles, and passing into the pelvis. The sac, as before stated, was thin and transparent, and presented the usual meso-colic vessels; but, where it became continuous with the peritonæum lining of the abdominal parietes, it was thickened, and in places opaque. From the period during which the hernia had existed, the posterior fold of the meso-colon, which was that chiefly implicated, had been sufficiently expanded to form the anterior portion of the sac, and the colon had been entirely displaced to the right side.

Remarks. In order to understand the mechanism of the form of Hernia of which the cases related afford examples, it must be remembered that, at the point at which the small intestine passes beneath the superior mesenteric artery and assumes the name of jejunum, it acquires a covering of peritonæum, derived from the most posterior of the two layers, reflected backwards from the omentum, and forming the lower layer of the meso-colon. If, therefore, at this point there be any deficiency in the peritonæum near the spine, so that an aperture be left in the anterior layer of the meso-colon, the small intestine, entering by such aperture, may gradually separate the two folds of peritonæum, of which the meso-colon consists, and may ultimately come to be entirely lodged in a sac so produced. A true hernia will thus be formed, inasmuch as the intestine has entirely escaped from its natural cavity, and is contained in a sac formed by the peritonæum. This seems to be the mode in which the cases of Meso-colic Hernia are produced.

The question, however, arises—How is the aperture, supposed to exist in the anterior layer of meso-colon, formed? Sir A. Cooper, after suggesting that it may be due, either to rupture from a blow received on the abdomen, or to an originally imperfect formation of the meso-colon, concluded in favour of the latter, as the most probable; and an attentive consideration of the subject has led me to adopt the same view. The peritonæum, both from its texture and its seat, is but little liable to be affected by external injury; and, were it so injured, it is scarcely probable that one of its layers should be ruptured while the other remained entire; still less does it seem likely that such an accident should not leave behind it obvious traces of its occurrence, in the form of adhesions or thickening of the membranes. In the four cases which have been related, there existed nothing to warrant the supposition that

the abdominal organs had ever been the seat of serious inflammation. The degree of alteration in the different layers and reflexions of peritonæum, and in the intestines themselves, was, indeed, only such as would necessarily ensue from the long continued pressure of the displaced parts. It is difficult, therefore, to suppose that any material injury of the abdomen could have been sustained; and it seems most probable that the meso-colon must have been originally formed imperfectly. This inference is corroborated by the existence of a small diverticulum[1] in connexion with the lower part of the ileum, found in the first of my own cases. The process of reasoning here adopted is further confirmed by the comparatively frequent occurrence of apertures extending entirely through the mesentery, as in the cases at first referred to in the paper. These are doubtless due to violent and irregular peristaltic action of the intestines, occasioning lacerations of both layers of their mesenteric attachment; and are so frequently found, that, did the same cause give rise to rupture of one only of the layers of peritonæum, the true Meso-colic or Mesenteric Herniæ should more commonly occur.

Sir A. Cooper has remarked, that this form of Hernia is little likely to be productive of strangulation. The displaced intestines not being subjected to such severe or unequal pressure as to produce much thickening or contraction of the orifice of the sac, the connexion between the Hernia and abdominal cavity will consequently remain free, and the intestines can pass into or out of the sac, according to their varying amount of distension. The second of the cases which I have just related is somewhat opposed to this view, as, though the orifice remained wide, its crescentic edge had nevertheless exercised such pressure as to give rise to a very decided contraction of the calibre of the intestine, evidently of long duration, and which must have interfered with the free action of the bowels, and had probably previously given rise to serious indisposition. Unfortunately, however, the history of the state of the patient before his last seizure could not be obtained. In the first case related, however, there is no reason to believe that the displacement of the intestines had been productive of any material inconvenience, though it is probable, that the peristaltic action of the bowels, in the sac, was less free than if they had occupied their natural position in the abdominal cavity. Sir A. Cooper suggests, that, from the same cause, in the case of Mesenteric Hernia which he has related, there had probably been a state of habitual constipation; but in the Meso-colic Hernia, he thought that the displacement could have exerted no material influence on the functions of the bowels.

[1] The diverticula, found so frequently within twelve or eighteen inches of the termination of the ileum, are, it is believed, now generally admitted to be the remains of the canal leading to the vesicula umbilicalis, in an early period of fœtal life. Were there any doubt on the subject, the cases related by Meckel, Wilkinson King, and others, in which, after birth, such diverticula were found opening at the umbilicus, must decide the question. Though diverticula are found in other parts of the alimentary canal than the ileum, it is certainly very rarely; and, when they occur in such situations, they may safely be regarded as originating in other causes.

CLINICAL OBSERVATIONS.

By JOHN ROSE CORMACK, M.D. Edin., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh, and formerly one of the Physicians of the Royal Infirmary and Fever Hospitals of that City.

IV. INFANTILE REMITTENT FEVER, TERMINATING IN HYDROCEPHALUS; DEATH PRECEDED BY CONVULSIONS. POST-MORTEM EXAMINATION: KIDNEYS CONGESTED; UREA, AND URIC ACID IN THE BLOOD.

The relation which renal toxæmia bears to some of the symptoms, and in particular to the coma and convulsions which so often usher in death in acute Hydrocephalus, is often very intimate, and of much practical importance. I am inclined to think that, by a just appreciation of it, I have often been led to adopt, and persevere in, treatment which has proved successful in the most discouraging circumstances. On the present occasion, however, it is not proposed to detail cases in which recovery took place.

The following is the history to which reference was made at p. 703.

Case of E. A., aged 18 months. The subject of the following history was, a few days before her decease, as robust, joyous, and beautiful an infant as could delight the eye. From my attendance at her birth, till the seizure with her fatal illness, she was much under my notice when visiting other members of the family; but, except on one occasion, it was never necessary for me to prescribe for her; and, then, the malady was so transient and trifling, as to have left no trace in my memory; and the only record is the formula for three aperient powders, entered in my daily prescription book. It can, therefore, be truly said, that her last was her only illness. Her teeth had, as the mother remarked, been found by her accidentally, and with surprise, as their coming had occasioned no feverish symptoms, whereas the other members of her numerous family had all suffered severely during dentition. The child was always plump, and firm in flesh; and she walked and spoke much better than is usual with infants of her age.

On the 14th and 15th June 1849, she was observed, both by the mother and nurse, to be fretful; and, on the latter day, she was drowsy. These symptoms were ascribed to the constipated state of the bowels; and to remedy that condition, the mother gave a dose of rhubarb and magnesia. It produced three dark-coloured, offensive, fluid stools. After these motions, the infant seemed decidedly better; she took some food with avidity, played for a short time with her brothers and sisters, and then fell asleep. The sleep continued, with hardly even momentary awaking, from 4 P.M. on the 15th, to 9 A.M. on the 16th, when she woke, and though in a languid condition, seemed contented and cheerful. At this time, when lying on her mother's knee, after passing a small quantity of high-coloured urine, and taking some food, she was observed to partially turn up the eyes and clench the fists; and about 11 A.M. the eyes suddenly turned quite upwards, the head and neck became bent rigidly backwards, and the whole frame was slightly convulsed. This seizure, which did not last many minutes, was the first thing which excited alarm, and caused me to be called in. I saw the little patient at 12½ noon. She was then in a deep and tranquil sleep. The face was pale;

the surface rather cold, especially the feet; and the pulse, 120. On being awaked, she became flushed and fretful; when I was examining the abdomen, mouth, etc., and scarifying the gums, she struggled and cried, as an infant of her age might be expected to do when unexpectedly roused; but she showed no signs of stupor, nor of any tendency to convulsions. The abdomen was not distended; the mouth was rather hot, and the gums over the first and second molars, on both sides, were somewhat, though not greatly, swollen; the tongue was rather dry, and very foul. It is important to mention, that the mother ascribed the seizure to exposure, when heated, to a draught of cold air from the river: and the continuance of the illness to the close and sultry weather. The condition of the atmosphere was such as to account for some part of the soporose tendency, as at that time many—healthy, as well as sick—were suffering from lassitude and drowsiness. After giving a guarded prognosis, scarifying the gums freely, so as to make them bleed a good deal, I administered, before leaving the house, two grains of hydrargyrum c. cretâ, with one of the resin of scammony. A sinapism was likewise applied over the loins; and I directed that the lower extremities should be fomented with mustard-water. I returned at 4 P.M. The surface was warmer; in other respects, the general character of the symptoms was the same. There had been neither urinary nor alvine evacuations, and the sleep had been heavy and uninterrupted. An enema, containing one drachm of turpentine, was therefore prescribed. At 9 P.M. I found that great improvement had taken place. The mother assured me, that, after the action of the enema, which produced an abundant evacuation of hardened fæces, the infant appeared to be quite herself again; was inclined to play, and took some sweetened milk and water, with eagerness and satisfaction. A small quantity of urine had been passed unconsciously before the enema was given; and I was thus disappointed in obtaining any for examination, which is to be regretted, as, in this early congestive stage, it would have been interesting to test it for albumen. I procured, however, the napkin, which exhibited a brownish stain, the margin of the stain being most deeply tinged. Litmus paper applied to the damp napkin was reddened. The quantity of urine voided on the napkin was small. When the enema operated, an additional quantity was passed; but, from being mingled with the fæculent discharge, it could not be examined. The pulse was not more rapid, but it was much stronger, the skin was warmer, and there was a very slight flush in the countenance. The following is a summary of the directions which I gave for managing the case, till my return in the morning. If the head became hot, an evaporating lotion was to be assiduously used; the lower extremities were to be kept wrapt up in blankets wrung out of hot water; and the general covering was to be light,—a single sheet, so long as the surface was warm; every four hours, a small dose (six drops) of the spiritus ætheris nitrici was to be given; and early in the morning, a powder of the same composition as that which was administered at the first visit.

17 *June*, 10 A.M. After I left last night, the infant got rapidly into a state of burning fever, which, after continuing for an hour, subsided, a slight and transient moisture appearing at the same time on the head, face, and chest. A small, offensive, and tar-like motion was passed at

9 A.M., the powder having been taken at 6 o'clock. Excepting a small quantity of urine passed at the same time with the motion, none had been passed since the operation of the enema. An aperient powder was given. In the evening I learned that a good deal of urine had been passed unconsciously, and likewise two offensive stools. I was told that about eight the surface became cold, and some slight convulsive movements were observed during sleep, after which a burning fever set in; and out of this state she was passing when I made my visit (10 P.M.) She was now sleeping softly, and perspiring profusely, with the breathing natural, and the pulse 98. The mother reported that there had been less stupor, and that she followed with her eyes all that was done in the room.

18 *June*. During this day, a good deal of urine passed unconsciously; the child slept, with only slight interruptions, all day; the skin was moist, the breathing easy, and the expression of countenance natural. A small quantity of urine was obtained for examination; it was high-coloured and acid. When heated, the supernatant portion became clearer after depositing a white precipitate; on adding nitric acid, and continuing the heat, the greater part, but not all, of this precipitate was dissolved. The quantity was too small to enable me to determine the specific gravity.

19 *June*. If there be any change to-day, it is for the better. The treatment was continued.

20 *June*, 10 A.M. A change, decidedly for the worse, came on during the night, and for the last twelve hours there has been profound coma, and neither alvine nor renal evacuation. The muscles of the face have been a good deal convulsed on several occasions, the fists clenched, the eyes open and upturned, and once there has been an attack of opisthotonos, as before my first visit. I immediately ordered a turpentine enema, similar to that formerly given; and the enema was administered, and the gums were again scarified.

21*st*. From 9 to 11 this morning there seemed to be some slight improvement in the countenance; but there had been hardly any, if any, urine passed. In the afternoon the stupor became very profound; a blister was applied to the head, sinapisms to the loins, a purgative enema administered, and a mixture, containing gamboge, given at intervals. The blister discharged freely; and there was one abundant liquid stool from the gamboge. Again the result of the treatment seemed to be hopeful.

22*nd*. There has been some improvement to-day, and the child has on several occasions recognized her mother, and brothers and sisters; but there was no diminution of the comatose state on the three occasions on which I visited her. Dr. Sibson saw the child at 9 P.M., along with me, when the condition was certainly very different from what had hitherto existed; this, perhaps, might be owing to the circumstance of the infant having taken too much of strong beef-tea during the hours when she had partial consciousness. The countenance was flushed, the head burning hot, and the pulse full, hard, and rapid. These symptoms were speedily abated by leeches to the temples, and the application of ice, for some hours, to the head.

23*rd*. The state to-day has been very similar to that of yesterday,

including the vascular excitement in the evening. The fever was not, however, of so long duration, and passed off in perspiration,—the consequence, apparently, of hot fomentations to the limbs, and the application of cold to the head. After the perspiration, the child seemed very weak, and two doses (of ten drops each) of brandy were administered.

24th. There has been much more prostration to-day, and a persistency of coma. There has been no water passed, excepting towards the afternoon, when a little was seen to flow, perhaps about three or four drachms, which left a stain upon the towel like that of bloody serum. A scanty stool was passed during the night. In the afternoon, about the same hour as on the preceding days, vascular excitement set in strongly. When I saw the child about 10 P.M., the pupils were contracted, the veins in the neck and head turgid, and, every ten minutes, there occurred opisthotonic convulsions, the fists being firmly clenched at the same time. The clenching of the fists was the first indication of the coming opisthotonos. Sometimes the face was distorted, but not always. At midnight I returned, and found matters had been going on from bad to worse; the convulsions were much stronger, almost without intermission, and accompanied by incessant and piercing shrieks. When I left between 12 and 1, I did not suppose that life could have lingered till 5 next morning,—the hour at which the infant expired. The convulsions and the shrieks continued up to the moment of death; and the mother assured me, that, upon some occasions, the violence of the spasms was such, as to bring the head and heels almost into contact.

When I saw the body early in the morning, some hours after death, the surface was purple, and the features much distorted.

Sectio Cadaveris, made twenty-six hours after death, on the 25th June, 1849, half-past 6 to 8 A.M., by me and Dr. Alexander Henry.

External Appearance. The anasarcous appearance was evident, though much less marked than during life. Notwithstanding the heat of the weather during the previous day and night, there was no trace of decomposition having commenced. There was slight cadaveric rigidity.

Head. The head was well formed. On removing the scalp, a small portion of the anterior fontanelle was observed to be unossified, and through the membrane in that situation, as well as through the bones themselves, could be seen the great vascular congestion existing below them. In dividing the skull, the bone bled freely; and on removing the upper segment, the dura mater presented a rigid appearance, from the prominence of the distended blood-vessels. The brain, being very soft, was cautiously sliced from above downwards to the roof of the lateral ventricles. The congestion between the hemispheres was very great, and the blood in the vessels of the substance of the brain was unusually abundant and fluid. The right ventricle was enormously distended with clear serous fluid; three and a half drachms were removed and measured, but an additional quantity was lost, from the softness of the brain causing a laceration by which it escaped. The left ventricle also contained an abnormal amount of fluid. The choroid plexus on each side was much gorged. The fourth and fifth ventricles were distended with fluid. The cerebellum was firmer than the cerebrum; and the pons varolii and medulla oblongata were much firmer

than the cerebellum. The vessels of these parts were congested. The amount of subarachnoid effusion was inconsiderable, as compared with that in the ventricles. No clot or extravasation of blood was seen, though carefully looked for. The fluid removed from the ventricle was examined by Dr. A. B. Garrod; he found it to have a specific gravity of 1007·5, and a slightly alkaline reaction.

Chest. There was no effusion into the cavities of the pleuræ or pericardium. The viscera of the chest were natural in position and structure. The blood in the heart and vena cava was fluid.

Abdomen. There was no effusion into the peritoneal cavity. The intestines were moderately distended with flatus. The liver was not congested; the gall-bladder contained a moderate quantity of black, thick bile. The spleen was, perhaps, a little more bulky than natural, but it was not softer than usual. Both kidneys were much enlarged; the left was the largest. When cut into, the blood trickled from them: they had a soft feel, and were so pulpy, that, in the hot state of the weather, and with other urgent duties to attend to, it was not possible to reserve them for microscopical examination. Their condition, however, was that of enormous hyperæmia, with, no doubt, ruptured Malphigian tufts. There was no urine in the bladder.

The Blood. Dr. A. B. Garrod very kindly made a careful chemical examination of fluid blood, chiefly removed from the heart, vena cava, and pulmonary artery, with a little also from the sinuses of the dura mater. The whole quantity examined was so small, that he could only procure from it 185 grains of solid matter. He says: "urea was found in it, in greater abundance than in healthy blood. It also contained a larger quantity of uric acid than healthy blood."

Remarks. The case which has now been detailed is interesting from the apparent absence, in its first stage, of inflammatory symptoms, from the well-marked remittent character maintained throughout by the disease, from the albuminous condition of the urine (as in intermittent fever), and from the superabundance of urea and uric acid found in the blood, by a gentleman whose accuracy in, and familiarity with, such researches, are well known.

Is acute Hydrocephalus always an inflammatory affection? I confess that my own experience has long inclined me to this opinion; and, that the treatment, which this view of the pathology of the disease suggests, is safe in the majority of cases, there can be no question. Leeching, general blood-letting, and active purging, are all most obviously efficient for good in a large number of cases. Still, in the case now narrated, there did not seem to be any propriety in regarding the disease as inflammatory; and, perhaps, in numerous instances in which blood-letting proves useful, the principle of its beneficial operation is the relief which it affords to congestion, just as it proves useful in certain forms and stages of remittent and intermittent fever. The recognition of this principle, if correct, would often be of great service in preventing mere empirical depletion, in regulating the amount of blood which ought to be taken, and in pointing out the exact periods at which it ought to be drawn. In place, then, of answering the question proposed, by an un-

qualified affirmative, it would apparently be more correct in theory, and more useful in practice, to hold that acute Hydrocephalus, *i.e.*, effusion into the arachnoid sac and ventricles, following in a few days, or it may be in a few hours, the first recognisable deviation from health, is a form of dropsy, which may supervene upon the congestive stage of a remittent or intermittent fever, with or without an intermediate inflammatory stage. The irritation of teething, also, intestinal worms, and various diseases of the abdominal viscera, occasion, in many children, severe and alarming head symptoms, depending on cerebral congestion, very prone to terminate in effusion. In each case, the special disorder must be the key to the treatment; and however imperative active measures may be, to avert or remove cerebral mischief, it would be mere empiricism, were we to treat every case as if the head were the primary or principal seat of the disorder. For example, it would often be good practice to combine the disulphate of quinine with calomel, or other medicine which we may exhibit to act on the chylopoietic viscera.

Early change of air might have been of material benefit in the case detailed. In two cases, almost identical in their symptoms, and exactly coincident as to local and atmospheric circumstances, I have, within the last few weeks, had the happiness to witness recovery; and in both, the treatment embraced the steady exhibition of quinine; and, in one instance, along with this, the patient had the benefit of change of air.

It may be well to remark, that for some months past, the majority of cases of all diseases in this neighbourhood have, so far as my experience goes, presented a well-marked tendency to assume the remittent and intermittent types. This has been particularly obvious in the serous diarrhœa, or cholerine, so prevalent and so fatal, as well as in such fully-developed cases of true cholera, as did not terminate too speedily to prevent the whole group of symptoms from being manifested. Being anxious to ascertain whether this interesting character had been recognized by others, I applied to Mr. Whiteman, my neighbour, who, as medical attendant on the poor of this parish, has had, in addition to his private practice, a large experience in cholerine and cholera, within the last few months; and he entirely corroborates what I have stated, as to these affections presenting an unmistakeable relation in the character and sequence of their phenomena to intermittent fever. It will be interesting to learn, whether the same thing has been observed generally throughout the country, or whether it has been more manifest in particular localities. It has certainly been equally obvious in some cases which I have had on the other side of the river, in Fulham.

Essex House, Putney, September 1849.

BIBLIOGRAPHICAL RECORD.

Researches on the Development, Structure, and Diseases of the Teeth. By Alexander Nasmyth. London: 1849.

This work, we are informed, had just been completed before the late Mr. Nasmyth was attacked with the malady which ultimately proved fatal. The delay in publication, thus unavoidably caused, has been unfortunate, as much that was considered new, when the book was written, has ceased to bear the attraction of novelty; and, laborious though the work be, others have been published, which are more complete, and, we may add, more useful. In saying this, we do not wish to detract from the merits of Mr. Nasmyth, but to express our candid opinion of the book before us.

The first and second chapters are devoted to the general physiology of the dental system, and the descriptive anatomy of the mouth and jaws. Chapters third and fourth treat of the descriptive, general, and minute anatomy of the teeth; and the development of the formative organs of the teeth is discussed in the fifth chapter. Then, in succession, we read of the general and minute anatomy of the dental capsule and pulp, the development of the permanent teeth, the teeth as an indication of age, and as an indication of the progressive improvement of the human race. The development of ivory, and the chemical composition of the teeth are treated of at length, and with much detail. In the last chapter, there is some information on the respective qualities of ivory. The first in density is that from Ceylon; and this commands the second price in the market. African ivory holds the next place in density, but the first in value, as possessing the cleanest grain. Ivory from Siam is next heaviest, and after that, ivory from Bombay. The latter is principally used for piano-forte keys, being very opaque, or *dead*, as it is technically called. Cape Coast ivory is the least esteemed of all. Fossil ivory is not alluded to, though it is frequently found in such excellent preservation, as to admit of its being converted into articles of use and ornament. That of Siberia is especially good; and, in the Wernerian Transactions, a gigantic mammoth's tusk is described, which was dug up between Edinburgh and Falkirk, and was sold by the workmen to an ivory-turner in Edinburgh, who sawed it asunder, and converted it into chessmen.

This work bears evidence of much diligent labour on the part of the author; but not less must have been the zeal with which his widow laboured at her part in its publication. There are few ladies who could have discharged so onerous a task, as that of editing such a book, with the accuracy and success with which this has been produced.

Diagnosis and Treatment of Eruptive Diseases of the Scalp. By J. M. Neligan, M.D. Dublin: 1848.

This is an unassuming, entirely practical work, by an author of much experience. Dr. Neligan is in the habit of employing, as local remedies in Diseases of the Scalp, the carbonates of soda and potash, either in ointments or lotions. The carbonate of potash being most irritating, he prefers it in pityriasis, herpes, and the chronic forms of eczema; but for impetigo, and the acute and recent cases of the other eruptions, he recommends the soda. In the treatment of the inflammatory division of eruptive diseases of the scalp, the alterative medicine used by Dr. Neligan is the yellow iodide of mercury, in combination with hydrargyrum c. cretâ, and aromatic powder. In all cases, the patient is kept strictly on milk diet, during the whole of the treatment.

The Three Kinds of Cod-liver Oil, comparatively considered with reference to their Chemical and Therapeutic Properties. By L. J. De Jongh, M.D., of the Hague. Translated from the German, with an Appendix and Cases, by Edward Carey, M.D. London: 1849.

Some of the most important information contained in the treatise of Dr. De Jongh has already been laid before our readers (March, p. 288); and as the first article of this Journal, by Dr. Williams, contained so elaborate and so thoroughly satisfactory a statement of the therapeutic value of Cod-liver Oil in phthisis, we must simply refer our readers to Dr. Carey's publication for such additional facts, as they may still desiderate.

We cannot agree with De Jongh in giving a preference to the dark-coloured oil. Many patients are quite unable to take it; and in none of the many instances in which we have given the purest and most tasteless which could be obtained, have we been disappointed in the amount of benefit produced. Since the publication of Dr. Hughes Bennett's treatise in 1841, we have been in the habit of extensively prescribing the oil; and as for a long time we gave preference to the dark-coloured, in consequence of the recommendation of that author, we are now able to speak of both kinds.

This monograph is of great value, and does much credit to Dr. Carey. It contains a considerable amount of information, not to be found in any other work.

The Treatment of Rheumatic Diseases by Lemon Juice: with Illustrative Cases from Hospital Practice. By G. Owen Rees, M.D., F.R.S. London: 1849.

Dr. Rees has made out, quite satisfactorily, the efficacy of Lemon-juice as a remedy in Rheumatic Diseases. It seems to be one of those remedies which act by eliminating morbid matter by the kidneys; and therefore acts beneficially very much in the same way as the acetate of potash or colchicum. In March last, in a severe case of rheumatic scarlet fever, we saw very marked relief to the pains from the following prescription, which was suggested by Dr. C. J. B. Williams. It was not specially for the rheumatism that the mixture was given; but when it was suspended, the pain became, in a few hours, as severe as before it had been taken. The draughts were given with a considerable excess of the lemon-juice, as they seemed, when so administered, to prove very grateful and soothing. To the citrates of ammonia and soda, and to the free lemon-juice, collectively, we ought, most probably, to ascribe the relief to the rheumatism; and we would be very much inclined to suggest a series of comparative experiments with the lemon-juice alone, and with it along with soda, potash, or ammonia individually. The following is the formula used in the scarlet fever case already referred to:—℞ Sodæ sesquicarb. ʒiss; ammoniæ sesquicarb. ʒss; syr. tolutani, ℥ss: aquæ ad ʒviij. M. Sumat cochlearia duo ampla quartis horis c. succi limonis cochleari medio.

Contributions to the Practice of Medicine on the Revulsive Agency of the Skin. By L. F. Crummey, M.R.C.S.E. pp. 91. London: 1849.

We should have been at a loss to conceive what led the author to publish this book, had we not been informed in the preface, that "to the professional reader the author does not suppose that his little work will supply any thing new, save matter for criticism; nor will it offer to the general reader any thing very interesting; but to the invalid, he presumes it will furnish matter for serious and important reflection."

Mr. Crummey may not agree with us as to the measure by which this, and the like class of works is to be meted; for in *our* opinion, they are not calculated to elevate their authors in the estimation of their professional brethren.

HEALTHY SKIN; a Treatise on the Management of the Skin and Hair in relation to Health. By ERASMUS WILSON, F.R.S. pp. 238. 1849.

This work, although written for the public, is not a catch-penny affair; but contains information which cannot be too widely disseminated. The subjects treated of in order are, the Skin, the Perspiratory System, the Hair, Diet, Clothing, Exercise, Ablution, and lastly, various Disorders and Affections of the Skin. Being written in a pleasant readable style, the book is likely to fall into numerous hands; and there are, every one knows, thousands who require to be told some of the truths which it aims at inculcating. There is no system, however absurd, from which some good is not to be derived; and though established by an ignorant enthusiast, there can be no question that hydropathy has rendered valuable service, by drawing the attention of the profession and the public to the free use of water. We will take on ourselves to say, that among the higher and middle orders, fifty years ago, not one in six washed more than their faces, hands, and feet, from year's end to year's end. We all know the story of Boswell asking Johnson (whose feet he saw protruding from the bed one dull morning), whether he *usually* slept *in his boots?* and marvellous must have been the accumulation on many skins, of a life's impurities. We believe, we say, that the change which has taken place in this respect, originating in fashion, and continued from its intrinsic value, is of incalculable importance; and that ablution will impart, to those who avail themselves freely of it, increased health and comfort, and will free them from many of the evils which are the offspring of checked perspiration and unhealthy skin.

The observations on Dress, especially on the costume of children, are sensible; and the evils arising from the false notions entertained by many mothers and nurses upon the subject, are forcibly pointed out.

We cannot close this notice without expressing the surprise we felt at meeting with the following passage (the subject under consideration being the sympathy between the nerves of the skin and those of the system generally): "This is the point of view from which must be viewed the death of the soldier at Hounslow, from the effects of military flogging. In him, the cause was neither the cutting of a tooth, nor a burn the size of a hand, but a bruising and laceration of the skin of the back, from the nape of the neck down to the loins: a state, in point of fact, involving the two conditions of an extensively injured surface, and a prolonged painful irritation (the punishment was continued for half-an-hour). After death, the existence of internal convulsions was proved (?) in this man, by the disorganization of his heart, and by the rupture and destruction of several of the muscles of his back" (p. 206). Now, not only does MR. WILSON step out of his course to introduce this, but he assumes as an established fact, that which the evidence of all the other surgeons went to deny. Far from the existence of internal convulsions having been proved by the disorganization of the heart, and the rupture and destruction of the muscles of the back, the bulk of the evidence tended to shew that Mr. Wilson was in error on those points. We cannot, therefore, assent to the position here laid down; and should have thought that the circumstances attending that inquest, and the very unpleasant feeling which it raised in the minds of many professional men, would have prevented the subject being unnecessarily obtruded in a popular book on HEALTHY SKIN.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

PRACTICE OF MEDICINE AND PATHOLOGY.

LÉVY AND THOLOZAN ON THE PATHOLOGICAL ANATOMY OF CHOLERA.

M. Tholozan, *chef de clinique* in the Hôpital du Val-de-Grâce at Paris, has lately published in the *Gazette Médicale de Paris* (July 21st, and 28th; August 4th, 18th, and 25th; and September 1st), the results of a series of careful observations, made by himself and M. Lévy, physician to that hospital, on the Pathological Appearances found after death in the bodies of Cholera patients. We translate the article nearly entire.

Introductory Remarks. A disease so complex and so changeable in its phenomena as Cholera, can only be elucidated by the minute appreciation of all its anatomical and pathological elements. It is only on a well-founded and correct knowledge of the pathology, and the morbid anatomy, of Cholera, that we can advantageously found general ideas of its progress in its epidemic visitations, and of their mode of propagation and renewal. All researches, even the most minute, are useful, when their object is to make us acquainted with the modifications undergone by the organism; and only in this way can we arrive at positive notions of the nature of diseases. Clinical observation and pathological anatomy, aided by chemistry and the microscope, will furnish us with the surest lights in observing the nature and evolutions of epidemic diseases, as well as the progress and characters of spasmodic affections. Encouraged by this reflection, M. Lévy and myself have undertaken a series of minute researches on the mechanism of the central circulation, and on the anatomical state of the heart, lungs, and nervous centres. We intend first to point out the modifications in the sounds of the heart in Cholera patients.

Sounds of the Heart and Vessels. 1. *Central Circulation.* Of fourteen algide cases, five were auscultated some minutes before death; in four of these the heart's sounds were dull, prolonged, weak, and obscure; in one case they were only weak, without alteration of *timbre*. There was no irregularity nor intermittence. The nine remaining cases were examined for some hours at least, and some for several days. In five, there was no change in the character or rhythm of the sounds. The *timbre* was heightened, as has been observed a few minutes before death, but generally in a less marked degree. Abnormal murmurs were heard in the four other cases, once with the first sound, three times with the second; and the details of these four cases throw much light on the cause and origin of the abnormal sounds in Cholera. In the first, the systolic sound was a little prolonged, and alternately accompanied with a slight murmur, or simply hoarse, or natural. At the autopsy, we discovered no fibrinous clots, nor alterations of the orifices. The internal surface of the left ventricle was slightly ecchymosed, as is frequent in Cholera. The right cavities were distended with black coagula, of tolerable consistence. In the two following cases, well-marked diastolic murmurs were heard, in one case, for twenty-four hours; in another, during three days. They disappeared as moderate reaction gradually set in, and became intermittent before ceasing. These murmurs were at one time gentle, at another somewhat harsh, with a sensation of *aspiration*. In the last case, the *timbre* of the second sound was changed; it was generally loud, and was, at intervals, accompanied with a slight murmur, at other times harsh, or of a *whining* character. In seven torpid cases, with well-marked reaction, the first sound was, in one case, prolonged into a murmur.

2. *Peripheric Circulation.* In twenty-one cases, the sounds were gentle, weak, sometimes inaudible, in the vessels of the neck, in the algide stage ; and normal during torpid reaction. Of thirty-three patients auscultated during convalescence from Cholera, nine had a continuous and redoubled or intermittent vascular murmur. All these observations, except two, were made on patients who had been in an anæmic state before they were attacked with Cholera ; and in two cases only the symptoms of Cholera had been well marked ; in the others, there had been cholerine, diarrhœa, or simple vertigo.

These results differ remarkably from those obtained by M. Bouchut. We did not find in the five cases which we auscultated while death was taking place, the single sound noticed by that observer ; the *tictac* of the heart continued till the last expiration, and ceased with it. Neither have we heard the friction sounds mentioned by M. Bouchut ; and necroscopic examination confirms our opinion of their non-existence. In 140 subjects examined at the Val-de-Grâce, we found no inflammatory changes in the pericardium. The lesions of the external surface of the heart are situated exclusively in the subserous membrane, and are not of a nature to produce friction sounds. Systolic and diastolic murmurs have been observed by us as well as by M. Bouchut ; but we cannot admit his explanation of their occurrence. In seventy-five autopsies, in which we examined with the greatest care the internal membrane of the heart, we found *no congestion of the endocardium with thickening of the valves.* The membranes of the valves, in all cases, preserved their polish and fineness. We must then have recourse to another explanation ; and the only probable causes seem to be the encumbrance of the cavities of the heart, especially the right, by the pitchy blood, the formation of black coagula, and, especially, a modification in the force or manner of the contractions of the heart, corresponding with the alterations in the consistence of that viscus which we have met with in a large proportion of cases. Lastly, we do not think there is more tendency to the development of jugular or carotid murmurs, during convalescence from Cholera, than in many other diseases, even in those considered inflammatory, when convalescence has been tedious and difficult. We do not think, from the result of our observations, that the peculiar alteration of the blood in Cholera would have the effect of producing vascular murmurs ; they would rather depend on previous modifications of the blood, and would be rarely observed in Cholera, the rapid evolution of which does not exceed twenty or twenty-five days.

These Post-mortem Appearances have been noted in seventy cases ; and may be compared with the results of sixty-three autopsies performed in the Hôpital du Val-de-Grâce during the early period of the epidemic, which have been published by M. Masselot.

Pericardium, Endocardium, and Muscular Substance of the Heart. *The almost entire absence of fibrinous nuclei, or plastic concretions* in the cavities of the heart, and the *facility with which the muscular substance loses its cohesion,* are facts which have been almost constantly observed, and which occur with the same frequency, both in the algide and in the torpid stages. The bodies were examined generally six, eight, or ten hours after death ; so that some value may be attached to our observations. The other pathological appearances occurred in the following order of frequency.

Thirty-eight algide cases, varying from eight to forty-eight hours.	
Considerable distension of right cavities	27
Sub serous ecchymoses	28
Violet suffusion of left ventricle	20
Yellow serosity in the pericardium (from 10 to 60 grammes)	7
Fluid blood	4

Twenty-two torpid cases, or with feeble reaction, varying from three to ten days.	
Sub-serous ecchymoses	18
Violet suffusions of left ventricle	16
Distension of right cavities	16
Yellow serosity in pericardium	8
Fluid blood	1

Sanguineous infiltrations of the heart are hence seen to be very frequent,

and to be more marked in the second stage, through the development and continuation of the pathological process which commenced in the first stage. We may here say, that all the lesions,—pulmonary, renal, and especially cerebral,—prove the identity of the nature of Cholera in its two conditions, which at first seem to present such a contrast of symptoms—*algidity* and *reaction*. It is an anatomical demonstration of the truth of a fact insisted on by M. Lévy —that *the nature of Cholera is identical in all its periods.*

The blood with which the cavities, especially the right, of the heart, are found distended, is generally in large brown-red and soft clots. The left cavities are rarely completely filled—never distended; and there is always more fluid blood in them than on the right side.

The *ecchymoses of the external surface of the heart* often constituted the only lesion. In 20 of the algide cases, they were confined to the posterior aspect of the heart; in 3 of these they were very numerous—in 17 less abundant. In 7 cases, they were found in great number both on the anterior and posterior surfaces. In the torpid cases, or with feeble reaction, they were confined to the posterior part in 14 cases; in 4 they were more numerous, and were seen on both surfaces. The most constant seats of these ecchymoses are the auriculo-ventricular furrow, the right border, and the interventricular furrow. When found on the anterior surface, they always manifest the same predilection for the vascular furrows, and for the regions of the heart where fatty cellular tissue abounds. They sometimes even are scattered among the parts where the muscular tissue lies immediately under the serous; but even in these cases, they prefer the neighbourhood of the more richly vascular parts, such as the apex of the heart, and the part of the left ventricle nearest its base. At first, they are simple rose-coloured spots in the subserous tissue; but, on increasing in size, assume red, brown-red, or blackish-red tints. Sometimes they only attain the size of a pin; at others, they lose their rounded petechial shape, and form knotty, elongated, and interrupted cords, along the course of the auriculo-ventricular vessels. Most commonly, they are irregularly round extravasations, from 1 to 3 millimetres in diameter. They are not only met with under the serous membrane; but, even in the substance of the adipose tissue, the liquid blood is extravasated into the vessels of the loose and permeable cellular tissue. The large vascular trunks in the vicinity are sometimes distended, generally half filled; the capillaries are generally equally injected on the anterior and posterior surfaces; and more so on the muscular substance than on the fatty tissue. The blue coloured capillaries, which give the heart of Cholera patients a cyanosed appearance, are not the only ones met with. We have many times met with a very fine clear red arborescent injection, with equally filled branches, situated in the serous membrane, in those parts only which are usually occupied in preference by the extravasations. Where these were absent or scanty, the superficial arborisations were most marked. We are led to ascribe great importance to these, as preceding the formation of sanguineous infiltration, the more so as we have observed the sanguineous exudation occupy the substance of the serous membrane.

The seat of the exudations seems to depend on three conditions: *laxity and permeability of the tissues, vicinity of the large vessels*, and *gravitation*. Their cause is more complex. Nothing proves it to be a particular modification of the blood. The stagnation of the blood in the heart, and its reflux into the capillaries, is doubtless a predisposing condition; but why should the almost exclusive seat of the ecchymoses be in the most closely woven portion of the cellular tissue, forming the serous membrane? To explain this, we must bear in mind the vascular injection, which has been already noticed. The ecchymoses of the auriculo-ventricular furrow prevailed on both sides of the vessels, some on the base of the ventricles, the other on that of the auricles. In thirteen cases, they were found on the external face of the auricles, outside the furrow; most commonly they were situated behind, opposite the inter-auricular septum, in the neighbourhood of the openings of the two

venæ cavæ ; occasionally some small ecchymoses extended on the auricular appendices. In eleven cases, we found these ecchymoses on the posterior aspect of the ascending aorta ; in nine cases they extended, being elongated, swelled, and interrupted, to the posterior surface of the thoracic aorta. They were here of a brown red colour, and seated in the cellular tissue which forms the first coat of the arteries.

The *ecchymoses* or *sanguineous suffusions on the internal surface* of the left ventricle seem worthy of especial notice. In the normal state, the internal surface of this ventricle is paler than that of the right ; and also presents, in many cases, violet-coloured striæ, which are more rarely seen in the right ventricle. In Cholera, these striæ are more numerous, scattered, or in juxtaposition ; sometimes they are confounded together into insulated patches, giving a clear red, violet, or brown-red tint to the endocardium. Both striæ and suffusions are seated beneath the endocardium. In some of the more strongly marked cases, we have noticed at the same time a destruction of the more superficial muscular fibres ; there were here true ecchymoses, slightly raising the endocardium. All these lesions are usually seated on the columnæ carneæ, or on the netted portion of the ventricle. They are more abundant towards the middle of its long diameter, and are absent in the vicinity of the orifices. They are more abundant anteriorly than posteriorly ; and the part of the endocardium which corresponds to the inter-ventricular septum is always less affected. The right ventricle sometimes presented violet-coloured striæ in considerable abundance ; and, in three cases only, suffusions alone were present. The almost exclusive occurrence of these lesions in the left ventricle cannot be ascribed to its dependent position ; for both walls are affected, and the right ventricle is more dependent than the left. The anatomical cause is to be found in the great vascularity of the walls of the left ventricle. On cutting across the hearts of Cholera patients, so as to remove the auricles with the base of the ventricles, the section of the anterior and posterior walls of the left ventricle was of a deeper red colour than that of the septum, and presented brown-red blood-points in abundance, which were entirely wanting in the septum and in the right ventricle. The softening, or rather friability of the heart, to which we have before referred, was more marked in the left than in the right ventricle.

The ecchymoses of the heart are not like the scattered and irregularly distributed petechiæ in scarlatina, severe variola, or epidemic meningitis ; but they are an anatomical lesion, important for their frequency and invariability of type. How far these are constant in Cholera, can only be determined by future observations, and by combined researches made simultaneously in different places on the same epidemic, and at different periods on different epidemics. At present, we do not hesitate to declare our opinion, that the ecchymoses of the heart should be inscribed in the history of Cholera,—at least in that of the present epidemic.

Lungs and Pleuræ. The following table shews the frequency with which congestions, infiltrations, and hæmorrhages, were found in the lungs in 60 cases :—

Thirty eight algide cases, varying in duration from six to forty-eight hours.	
Slight congestion of both lungs	5
——— ——— of one lung	2
Marked congestion posteriorly and inferiorly	12
Serous infiltration	1
——— ——— with loss of cohesion	9(6?)
Sub-serous œdema	1
Slight diffused sanguineous infiltration	17
Partial and lobular apoplexy	7
Melanigenous congestion	4
Sub-pleural ecchymoses	16
Pleural and sub-pleural ecchymoses	4
Sanguineous infiltration under pleura	1
Incipient lobular hepatisation	2
Twelve cases with torpid reaction, varying from five to ten days.	
Slight congestion	5
Œdema of the upper lobes	1
Slight diffused sanguineous infiltration	5
Sub-pleural ecchymoses	3
Partial apoplexy	1
Red lobular granulations	5
Grey granulations	1

Seven cases of weak reaction, varying from three to four days.

Congestion posteriorly and inferiorly ..	7
Sub-pleural ecchymoses	2
Sanguineous infiltration posteriorly	2

Three cases with no reaction, cyanosis and algidity being persistent, lasting 4, 6, & 10 days.

Congestion	1
Lobular apoplexy.....	2
Apoplectic nuclei.....	1
Pleural ecchymoses	1
Sub-pleural ecchymoses	2

These lesions may be grouped in the following order.

38 Algide cases	Simple congestion of the pulmonary tissue	7
	Various sanguineous infiltrations	29
	Sanguineous infiltrations with granulations	2
22 Cases, either torpid, or with feeble or no reaction	Simple congestion	3
	Various sanguineous infiltrations	13
	Infiltrations with granulations	6

Simple congestion was observed in only one-ninth of the cases. In several others, *sanguineous infiltration* was more marked. In more than a third of the cases, the pulmonary lesions were not so strongly marked, but that they might have been overlooked by some observers. In studying the progressive chain of these lesions, we find a crowd of essential, secondary, or accidental phenomena, with special characters, grouped round a single general phenomena—*congestion*. Previous to the more advanced alterations of the pulmonary tissue, which we have designated *partial or lobular* apoplexy, there are found in all cases, *diffused sanguineous infiltrations*. This is a less severe lesion, inasmuch as the blood is as yet disseminated, and as the portions of the lung have not yet been entirely invaded by the effusions, which destroy its cohesion and anatomical structure, by separating, breaking up, or softening the different elements of the tissue. In a still lower form, the blood is contained in the vessels, which it immoderately distends. This is the phenomena which we designate by the term *congestion* (the first degree of alteration in choleraic lungs).

Certain peculiar well defined characters permit, in a great number of cases, this *congestion* to be distinguished from the phenomena of the same nature, which are produced, in a host of diseases, at the posterior and inferior part of the lungs. The principal distinctive sign of choleraic pulmonary congestion is derived from the physical properties of the blood which distends the vessels. In typhoid and eruptive fevers, etc., the hyperæmia, arising from the accumulation in the vessels of liquid blood, is always accompanied by sero-sanguineous infiltration. In Cholera, when congestion exists alone, large drops of semi-fluid blood exude on sections of the posterior parts; the tissue yields no serosity on pressure; it crepitates but little, from the absence of air in the vesicles. The pulmonary tissue is very resistant, and has undergone a remarkable condensation: it is difficult to free it from the blood, which is neither infiltrated into the tissues, so as to escape from the orifices of the divided cells, nor does it abound in the large trunks. These yield only, perhaps, a few syrupy drops; and it is difficult to wash the pulmonary tissue, which is thus engorged in its minutest vascular ramifications. Let us remember this first fact. We shall hereafter have to consider two curious anatomical transformations which evidently arise from it. Congestion, when general, mostly affects one lung more than the other; and always predominates at the posterior and inferior portions. These parts present a deep red colour on section. At the anterior and superior part, the cut surface is of a brighter red colour; and the drops of blood which escape here are liquid, and of a clear red; while the posterior parts give a black pitchy blood on section. This difference is constant and remarkable; it bears a relation to the changes in the pulmonary parenchyma, and permits us to appreciate their importance by the variable degree in which the functions of the lung are impeded by the consistence of the blood itself. This simple anatomical observation, which may be verified by examining the lungs in almost all

cases of algide Cholera, leads us to see that so important an alteration of the blood takes place, at least as regards its physical properties, in the capillary circulation. It is in the most minute vessels of the lungs, at the moment when the blood is passing for the purpose of undergoing the respiratory changes, that this characteristic alteration is accomplished. When hæmatosis goes on to the last moment, fluid red blood escapes from the vessels ; but when this process is very probably impeded, where the pulmonary tissue no longer crepitates, the blood has that pitchy, syrupy aspect, which is most met with in other diseases where, notwithstanding, respiration is impeded, as in pulmonary affections, etc. It may be objected that the blood is primitively altered in its entire mass. But why then does syrupy blood always exude from the congested portions, but clear and liquid blood from the other parts of organs, not only in the lungs, but even in all the other parts of the capillary system, where hæmatosis is infinitely less active? To admit a previous change of the blood, would be to accept as a premiss an illegitimate and improbable hypothesis. In the great central vascular trunks, no physical or chemical change takes place. The cyanosis of the skin of Cholera patients is only a *repetition*, on another respiratory surface, of the phenomenon which is going on in the lungs. In using the word *repetition*, we would not have it to be inferred that the cutaneous cyanosis is consecutive or subordinate to the pulmonary congestion. At the same time with, and even before, the engorgement of the capillaries of the lung, the obstruction of the vascular network of the skin takes place, expressing, under different tints, the different phases and multiple modifications of a general phenomenon, which can be nowhere so well analyzed as in the loose vascular network of the lung. Pulmonary cyanosis was neglected in 1832 ; but from the appearance of Cholera in 1849 up to the present time, has been made the subject of the most attentive researches.

Next in order of morbid development to pulmonary congestion is *diffused sanguineous infiltration*, being the second degree of alteration in choleraic lungs. It is constantly allied, in a certain degree, to congestion, but does not always require for its development an extreme turgescence of the vessels. It is generally found in the posterior and inferior portions of the lungs. The blood there extravasated exuded on pressure, sometimes fluid, and without any of the characters of Cholera blood, sometimes semi-fluid and pitchy. The hæmorrhagic effusions are generally just under the pleura, at a depth of from 2 millimètres to 1 centimètre ; they appear through the transparent serous membrane as large diffused ecchymoses situated under that membrane ; in some rare cases they are accompanied with sub-serous extravasations ; more rarely, they are met with in the centre of the lung. We have never seen them exactly limited to certain lobules. In the most marked cases, the infiltration is of a deep wine or blackish-red-colour ; the lung is completely soaked with blood in the greater part of its extent, sometimes in the two posterior thirds of the lower lobes, and, in some cases, even in the posterior half of the upper lobes. On pressure, thick, brown-red, scarcely aerated blood is forced out ; and, on pressing more forcibly, the fingers easily penetrate the softened spongy tissue. By moderate pressure, the lung is freed, with difficulty, from the blood with which it is loaded ; and it may then be found that the organ has not lost its cellular texture, and that the tissue is not yet ruptured. But even though there be no destruction of the parenchyma, there are at least, in *apoplexy by infiltration*, lesions of such a character, that the lung can only recover its functions with difficulty, and at the cost of a series of pathological modifications ; if, indeed, a patient suffering from such a lesion, which would infallibly cause death in any case, could be expected to survive, when he is also under the lethal influence of Cholera. The lesions are sometimes, though less extensive, more advanced ; the pulmonary tissue is not only soaked with blood, but destroyed. These cases of apoplexy are pretty rare ; but we have noticed several cases, which will be

found mentioned in the table as *partial and lobular apoplexy*, forming the third degree of alteration. This state is seldom accompanied with well-marked diffuse infiltration: it would seem as if the hæmorrhagic effort is more powerful in isolated spots than over a greater extent of surface. We have never met with apoplectic nuclei of large size. In the autopsiés performed by M. Masselot, this fact was recognized in a large number of cases. We have found two varieties, which may be only differences in degree of these partial apoplexies. In five cases, we have met with completely indurated nuclei, projecting from the cut surface, of a glossy coal-black colour, and from one to two centimètres in diameter. A little brown-red blood could be extracted from them on pressure, and the tissue was broken up. They were never accompanied by granular transformation. In five cases, the meshes of the pulmonary parenchyma were broken, and the blood could be washed out. The vessels and weakened cellular partitions could then be seen at the bottom of the cavity hollowed out by the hæmorrhage. The mechanism of these infiltrations seems neither to depend on congestion, nor on the dependent position. We know that there is in Cholera a gradual and regular diminution of the central circulating impulse; during a certain time, there is even a complete arrest of the circulation from the centre to the periphery. It is not at all through the influence of the central circulating organ that these infiltrations can take place; and we must, then, admit an entirely special action in the capillary system. We have already seen that it is in this system that the blood undergoes that modification, and acquires that viscosity which, apart from all other influence on the tissues, renders it unfit for circulation. In the lungs, as in the heart, mucous membranes, and skin, and probably as in all organs, sanguineous infiltration is dependent on some peculiar unknown conditions of the capillary circulation. By appreciating all the modifications of this circulation in the lungs of Cholera patients, if we do not resolve the problem, we see it in every point of view.

Serous infiltration was met with in eight cases. In six, it was accompanied with slight sanguineous infiltration, and a sanguinolent serosity streamed from the different sections of the lung. In two cases, the infiltration was purely serous, giving rise to pulmonary œdema; in one of these, the accumulation of serosity was so great as to raise the pleura, and separate it from the lung to the extent of two or three millimètres. The œdema of the lungs was always accompanied with more or less congestion of the inferior portions. In the points where it was most marked, we sometimes found nuclei, where the pulmonary tissue, being washed by the serosity, was white and transparent like œdematous cellular tissue, without any trace of injection, while other lobules in the immediate vicinity were congested or infiltrated.

Melanigenous congestion was met with in four of the cases where the serous infiltration was most marked. We have, at least ten times, met with nuclei, sometimes of large size, where the substance was white or rusty grey; and with these we have sometimes found *black-coloured spots*. We cannot forbear recognizing the complete identity in colour and appearance between this matter and the common melanosis of the lungs; and we might take them for physiological varieties, if the melanosis were disposed in nuclei or striæ in the usual conditions, and were not diffused, sometimes presenting the rusty tints of which we have spoken. It is rather a pathological phenomenon; and this is proved by anatomical examination. On gently scraping with the scalpel, blood and serosity were made to exude; and on scraping them again after washing, a considerably injected vascular network was found, of a dark indigo colour in the large trunks, but coal-black in the capillaries. These were very numerous and arborescent, pervaded the whole surface of the section, and produced by their confluence the general melanic tint. Melanotic formations are, in our opinion, due to an unknown modification of the blood contained in the capillaries, which, as we have long observed in the intestinal ulcerations in typhoid fever, seems to be constantly accompanied by œdema of the tissues

in which the vessels are thus engorged, and almost completely obliterated. The rapidity of their formation is not more extraordinary than that of pus in epidemic meningitis, in puerperal fever, or in ophthalmia in armies ; or than the early occurrence of albuminuria in an attack of Cholera.

Granular inflammation was met with in eight cases. It was in the second stage (red lobular hepatisation) in two algide cases, one after twenty-four, the other after forty-eight hours. In five cases of the period of torpidity, it was in the same stage ; and in one, it was in the third degree (grey lobular hepatisation). It is of importance to decide how far these lesions, evidently inflammatory, are connected with Cholera ; for if the primitive lesions in Cholera, which we have described, can give rise to pneumonia, this is another fact to be added to the history of choleraic lesions. The two cases where red hepatisation was met with in the algide stage, give only a negative solution to the question. In these two cases, in fact, the pulmonary inflammation was coincident with the algide period of Cholera, and developed itself at the same time with the primary choleraic lesions of the lungs, being neither subsequent to, nor dependent on them. Being of small extent, and reaction being absent, it silently pursued its course, during the torpid period, and arrived at the state of hepatisation just as it would have done in ordinary cases. We must then admit that the pneumonia may have existed before the Cholera. If pneumonia were met with in Cholera patients only as a sequel of sanguineous engorgements or infiltrations of the lung, and if its relation with these states were established by anatomy, there would be reason for considering the six cases met with during the torpid stage as reactional pneumonia. But the relations, which the symptoms appeared to indicate in some cases, and which were perceived in the autopsies made during the early period of the epidemic, do not appear to us striking : and, at whatever conclusion we arrive as to the pneumonia of Cholera patients, we must set aside the two algide cases above-mentioned, as examples of coincidence, not of reactional sequence, nor of complication. Independently of the choleraic congestion and infiltration, these two cases of hepatisation tend to confirm one of the most curious properties of epidemic diseases—their aptitude to attack subjects affected with other diseases, either commencing, or even in a state of incubation. A still more remarkable fact is that, in one case, in spite of the development of the choleraic phenomena, the pneumonia proceeded to the third degree. It is true that we had to deal with a subject in the stage of torpid reaction, a state of the economy singularly favourable to the development of already existing inflammation.

The *Pleura* will not afford us many new remarks : we have mentioned the ecchymoses of which it is pretty frequently the seat. These sanguineous effusions are round, from 1 to 3 millimètres in diameter, and are seated in the sub-serous tissue. The pleural ecchymoses, small and rose-coloured at first, gradually become more voluminous and of a brown red ; they are always situated at the posterior and inferior parts of the lungs, either in the sub-serous tissue, or in the substance of the serous membrane, and, in the rare cases referred to in the table, on its surface. A very fine cellular lamina then envelopes the effused mass. There is no pseudo-membrane. These effusions are most commonly accompanied with sub-serous ecchymoses. In one case, we met with a true sanguineous effusion, of the dimension of 2 centimètres, joined to the serous membrane, and adhering pretty firmly, by the aid of a very fine cellular tissue, without any trace of plasma.

Our researches on the anatomical lesions of the lungs lead to the conclusions that the following changes take place :—Various and numerous disturbances, with simple obstruction of the capillary circulation ; total arrest of that circulation ; extravasation of blood ; and complete alteration of the physical properties of that liquid in the most minute capillaries. The nature of the modification which the blood here undergoes is unknown ; but we may say, that it results from a combined action of the living solids and fluids. This

consideration tends to banish completely from our thoughts any theory tending to establish the relation of cause and effect between the intestinal excretions and the changes in the blood. To admit such an idea, it would be necessary not only to demonstrate that the chemical composition of cholera blood is explicable by the intestinal excretions, which are so abundant in some cases, while they are almost absent in a certain number of others, but to shew that the same change does not take place in the other capillaries of the system. The theory is indeed very attractive, that all the other morbid phenomena in Cholera are consecutive on the abundant vomitings and stools ; but who has been able to study, in their origin, all the symptoms of a disease so little known, or to follow their development so as to shew their dependence on each other ? Chemistry fails in proving it ; anatomy, as we have seen, is opposed to it ; and symptomatology positively demonstrates its inexactitude, by shewing that, in the great majority of cases, the patients have experienced, previous to the appearance of any symptoms in the digestive canal, well-marked modifications of innervation—vertigo, noises in the ears, affections of the sight, prostration, depression, sometimes even cramps. The examination of the alterations of the mucous membrane of the intestinal canal will still less tend to support the opinion which we oppose.

Bronchi, Trachea, Larynx. In fourteen out of fifteen algide cases, we found the follicles at the bifurcation of the trachea more or less developed : in one case, they were scarcely visible ; in four cases, they were pretty large, whitish, and abundant ; in two only were they found prolonged into the third divisions of the bronchi ; in six, into the second ; and in six they were confined to the primary divisions. They are usually round, scarcely projecting, of the size of the head of a needle, and slightly pearly : in one case they were quite transparent, and in another slightly flattened : in several cases, they were completely raised in passing the blade of a scalpel over the mucous membrane, and might almost be thought not to have belonged to it. In at least one half of the cases, the larger bronchi presented considerable vascular injection, while the mucous membrane of the smaller tubes was scarcely injected, until they approached the most affected parts of the lungs. In two cases, the bronchi were of a wine-red colour at their origin ; once we met with brown-red scattered ecchymoses in points in the middle divisions, the tissue being but little injected. The ordinary secretion was always more or less increased ; in four cases the mucus was abundant, thready, and translucent ; in two, it was slightly opaque ; in one, it was mixed with much air, forming a whitish froth. In six torpid cases, the follicles at the origin of the bronchi projected slightly in three ; in two, a whitish froth existed in the tubes. The mucous membrane was, in one case, whitish or greyish at the bifurcation, as if it had been macerated.

Out of ten algide cases, the follicles of the *trachea* were abundant and whitish in five ; very small in two ; small and translucent in one ; flattened in one ; and in one only they were absent. In the latter case, the trachea was strongly injected. In four cases there was a deep red injection ; in three it was bright red, twice scarcely pronounced, once absent. The follicles, as well as the vascular injection, were always more strongly marked at the lower than at the upper part of the trachea. In two cases we found the trachea pale superiorly, and blackish at the inferior and posterior part. We remember also having since then met with this blackish appearance of the posterior part of the larynx in a pretty large number of cases : it depends on the alteration and infiltration of the blood contained in the vessels between the rings, a phenomena analogous to that which frequently occurs in the great vessels of the cul-de-sac of the stomach, giving rise to lividity. In six torpid cases, the trachea was once found pale, twice strongly injected ; in three only of these cases, there were slightly projecting follicles in the neighbourhood of the bifurcation.

The *larynx* was pale in eight out of ten algide cases, and presented, in

two, flattened follicles above, below, and between the vocal chords. The same appearance was seen once on the posterior aspect of the epiglottis, and once between this organ and the larynx. No remarkable alteration was observed in the torpid cases.

The summary of these observations is as follows :—The mucous membrane of the air-tubes presents, in almost all the algide cases, an abundant follicular eruption, most frequently accompanied by a notable injection. The points where this transient eruption continues most in the torpid stage, are the lower part of the trachea and the origin of the bronchi, where also the injection is more marked in Cholera, as well as in most other affections. The hyperæmia is always more marked in the posterior half of the tracheal tube, while the eruption is equally abundant anteriorly and posteriorly.

Tongue, Pharynx, Œsophagus. The follicles at the base of the tongue are, in Cholera, the seat of well-marked swelling. They form a rounded and somewhat flattened projection, depressed and perforated at the centre, from which may be squeezed sometimes an entirely liquid opaline matter, sometimes a whitish semi-consistent substance, which takes a spiral form. In ten algide cases, these follicles were more or less tumified ; in four, the tonsils presented a similar appearance, and yielded the same kind of liquid ; in three, there was considerable vascular repletion at the base of the tongue, and round the tonsils as far as the pharynx. The trunks thus injected had an indigo or brown-red tint. In six torpid cases, we twice met with no tumefaction of the follicles at the base of the tongue ; in two, it existed in a slight degree ; in one, it was accompanied with a pultaceous exudation from the tonsils ; and in another, with œdema of the arytæno-epiglottic folds, and of the ventricles of the larynx. In the two latter cases, a very intense red-brown vascular injection was observed, and seemed connected, on the one hand, with the submucous œdema, and, on the other, with the pultaceous formation, and probably also with the alteration in the secretion of the follicles and tonsils, which was, in these cases, semi-liquid, of the consistence and appearance of phlegmonous pus. The other portions of the buccal mucous membrane presented nothing remarkable ; the tongue, however, was often increased in size, and its papillary and follicular system was in a state of turgescence.

The mucous membrane of the *pharynx* presented follicles, either isolated, or agglomerated into the form of small slightly projecting angular patches, from two to four millimètres in diameter, situated most commonly in the lateral grooves, behind the arytænoid, cartilages.

In the *œsophagus*, the follicles were more abundant in the two upper thirds in 6 out of 15 algide cases ; in 2 they were more evident inferiorly ; in 2 they were scattered ; in 1 fixed ; in 2 projecting ; and in 2 entirely absent. In 1 case, the mucous membrane was infiltrated with blood at the lower part ; in 2, it presented spots of ecchymoses ; in 3 cases, we observed ecchymoses in the loose cellular tissue at the posterior part of the canal. In the torpid cases, the eruption was met with only three times out of six ; and in two of these, was more marked above than below.

In three cases of scarlatina observed during the epidemic of Cholera, the follicles at the base of the tongue and the tonsils were tumefied in a remarkable manner ; and a yellowish purulent-looking matter could be pressed out from their excretory orifices.

Stomach, Duodenum, Jejunum, Ileum, Large Intestines. The gastro-intestinal mucous membrane, considered as the principal seat of Cholera by most of the observers in 1832, presented well marked and important alterations. We can now, perhaps, explain them more exactly than before, because the actual spirit of observation in medicine is more disengaged from systematic ideas, and freed from the trammels of an exclusive theory. Here, as in the instances already given, we purpose carefully distinguishing the morbid alterations of the algide from those of the torpid or consecutive period, leaving for

future consideration the facts relating to the intestinal fluid, to the weight of the intestines, state of the peritonæum, etc. The condition of the gastro-intestinal mucous membrane in 38 *algide cases* is thus exhibited :—

Stomach.	CASES
Pale	3
Slate-coloured, blackish grey, etc., sanguineous congestion at cul-de-sac	15
Rose-tint	5
Ecchymotic spots	8
Cadaveric softening of the dependent parts	8
Cardiac and pyloric psorentery	10
Psorentery at the two curvatures	1
——— at the pylorus	10
Duodenum.	
Black melanotic spots of the villosities	6
Brown red spots	8
Psorentery	10
Jejunum.	
Pale	6
Rose-tint	3
Thick arborisations	4
Fine ditto	7
Scattered psorentery	10
Fine ditto	8
Psorentery confined to inferior part	3
——— more marked superiorly	4
Patches	5
Granular patches	4

Jejunum continued.	CASES
Maceration of upper fourth	1
General maceration	1
Ileum.	
Pale	2
Fine arborisation	15
Rusty-coloured suffusion	2
Psorentery confined to the valvules	5
——— at first rare	9
——— general	20
Greyish slightly projecting patches	18
Rose-coloured patches	4
Red patches	4
Maceration	1
Large Intestines.	
Pale	7
Partial arborisation	5
Fine arborisation	6
Brown-red local sanguineous infiltration, with or without erosion	5
Softening of the cæcum	3
General softening of the mucous membrane	1
Psorentery, with blackish orifices	12
White psorentery	7

In 12 *torpid* cases the following appearances were observed.

Stomach.	
Sanguineous congestion	1
Brown-red spots	9
Cadaveric softening	1
Psorentery	8
Duodenum.	
Brown red spots	3
Psorentery	1
Jejunum.	
Pale	1
Arborisations	2
Greenish and yellowish	2
Psorentery	3

Ileum.	
Fine arborisations	3
Psorentery at lower fourth	9
Scattered psorentery	3
Patches	3
Rosaceous psorentery at points	4
Large Intestines.	
Arborisations	5
Psorentery	8
Rosaceous psorentery	1
Ulcers	1
Softening of the cæcum	1
Cæcum red, with venous congestion	1

Seven cases with *feeble reaction.*

Stomach.	
Sanguineous congestion	3
Ecchymotic spots	5
Pyloric psorentery	4
Duodenum.	
Deep red spots	4
Jejunum.	
Pale	3
Fine arborisations	2
Maceration of upper fifth	1
Scattered psorentery	2

Ileum.	
Pale	2
Fine arborisations in scattered places	3
Psorentery *(volontaire)*	5
Fine psorentery	2
Rosaceous psorentery inferiorly	1
Greyish patches	1
Rosaceous patches	1
Large Intestines.	
Pale	2
Arborisations	1
Slight psorentery	4
Rosaceous psorentery of lower third	1

Three cases with no reaction.

Stomach.	
Brown-red spots	1
Greyish	1

Duodenum.
Nothing remarkable.

Jejunum.	CASES
Fine arborisations	1
Greyish patches	1
Rosaceous patches	1
Psorentery	2
Maceration at end of first half	1
Ileum.	
Fine arborisations	1
Psorentery	2
Patches	2
Ileum continued.	CASES
Psorentery confined to valvulæ	1
Large Intestines.	
Fine arborisations	1
Sanguineous suffusion, with ulceration of the lower fourth	1
Sanguineous suffusion, with ulceration of upper third	1
Psorentery	1

It is remarkable, how rapidly the follicular eruption appears at the commencement of the jejunum, and there attains its maximum of development, and with what facility it disappears with reaction, or even without reaction, after the second or third day. Much stress has been laid on the swelling of the solitary glands of the small intestine : it has been thought that all the Cholera fluid was poured out by these organs. Whatever may be the number of glands thus tumefied, the alterations which they undergo in Cholera is nothing in comparison with that of which the mucous membrane is the seat in some cases. The almost exclusive attention which has been paid to the development of the solitary glands, has tended to throw into the shade the other alterations of texture ; indeed, we did not notice the latter during the early period of the epidemic.

In examining the creamy whitish matter, which may be obtained by scraping the intestinal mucous membrane, we have been several times struck with the appearance presented by the commencement of the jejunum. In five cases, it presented the appearance which we have termed maceration, viz., complete absence of the vascular striæ throughout the entire wall of the intestine ; the mucous membrane having the aspect and consistence of having been macerated for some days in water or alcohol ; and being easily detached, by scraping, in large shreds. Its colour was sometimes that of a dead leaf, sometimes greyish yellow or white. Close to these portions were observed loops of intestine having the normal aspect and texture ; they were rosaceous and finely injected. This alteration was especially observed at the commencement of the jejunum ; sometimes also in the duodenum ; and although our observations have been too limited to allow us to form a decided opinion, we are inclined to think it connected with the obstinate vomitings which occur during reaction. Horner has described, in the *American Journal of Medical Science*, for August 1835, an alteration in the mucous membrane of Cholera patients, in which the superficial layer of the membrane is raised, and the superficial venous network is brought into view. He represents also, in a curious plate, a portion of intestine in which the mucous membrane is half raised and detached. These cases are probably very rare ; but seem to have a relation to the lesion we have described. With this special lesion we would associate the softening (in a great measure cadaveric) of the dependent portion of the cul-de-sac of the stomach ; the softening, with thinning, of the mucous membrane of the cæcum, which we have several times raised in the form of a thin gelatinous layer ; and a similar alteration which we once found in the whole extent of the colon.

We have given the name of *psorentery* of the stomach to the appearance of small oval friable and whitish bodies, of the size of a pin's head, situated especially round the orifices, and along the small curvature. In the duodenum and upper third of the jejunum, the follicles are generally larger and more projecting, rarely opaline ; they are surrounded by villosities, bathed and soaked with Cholera fluid. In the lower part of the jejunum, and in the ileum, the psorentery is whitish or pearly. Sometimes the number of follicles could be counted ; at other times, among the larger ones, were observed an innumerable scattering of small follicles, scarcely raising the mucous membrane. Psorentery is met with in other diseases than Cholera, as in cerebro-spinal meningitis and scarlatina ; but not in such a marked proportion, and

the Cholera fluid is wanting. The size of the glandules, and their confluence at the upper part of the small intestines, are characteristic in Cholera.

Whether the Cholera fluid be a secretion, or a simple transudation, or both, we are unable to decide. On the complete modifications of the sudden perversions which the ordinary secretory phenomena undergo, physiology and anatomy have to this day remained mute, and it would be useless to build hypotheses. To the epidemist, these facts bear a relation to equally inexplicable phenomena, which seem to reverse the ordinary laws of physiology and pathology. We refer to the almost sudden and abundant production of pus in some cases of epidemic cerebro-spinal meningitis, in puerperal peritonitis, in the ophthalmia of armies, without previous inflammation, and even sometimes without visible injection, and to the profound and rapidly mortal lesions in dysentery, carbuncle, and other epidemic affections.

The exclusive study of anatomical lesions, however complete it may be, does not necessarily explain the value of the changes which take place in the organic action of the tissues. One phenomenon, however, which is at least concomitant, if not initial, is pointed out to us by anatomy and induction: it is the afflux of blood towards the tissues, which pour out from their surface a torrent of morbid matter; it is the determination to the surface of, and even into the substance of, the membranes, of a large quantity of blood. The minute injection of the intestines, in some cases, sufficiently points out this congestion; but in the absence of this, and to explain, at the same time, the intestinal secretions and the alternations of paleness and injection of the mucous membrane, we would call to mind the phenomena presented by the skin. The cutaneous cyanosis, in its numerous variations, shews us, better than any reasoning could do, the state of the intestinal mucous membrane during life, and explains fully its diversified appearances after death. It is from this, that in a great measure, doubtless, are derived the different morbid actions which take place in the skin, presenting the greatest analogy with those of the intestines. Along with the cyanosis there is, in fact, augmentation and perversion of the cutaneous secretions; there is also tumefaction of the follicles; there is a clammy, pasty state of the skin. In some cases, we have even observed on the hands, fore-arms, and under the clavicles, large surfaces where the skin was entirely *macerated*, being generally white, pale, and shrivelled. The epidermis was irregularly thickened; and, in some cases, translucid sudamina were noticed. This was more generally met with in favourable, than in fatal, cases. The altered skin regained its normal characters, after the recovery of the patient.

Mesenteric Ganglia. In the algide cases, these were sixteen times slightly tumefied; twelve times they were softened and enlarged; and in ten cases their condition was not observed. In the twenty-two cases with or without reaction, they were slightly increased in eight: softened and tumefied in six; and in eight their state was not examined. We found no alteration in these organs in fat subjects, whose mesentery was loaded with adipose matter. In almost a third of the cases, the softened and tumefied glands were yellowish throughout; in the other cases, they presented a mixture of brownish and yellowish portions. The injection was sometimes in the centre, sometimes at the periphery. In the most marked cases, they were only doubled in size, and their tissue yielded on pressure a yellowish or whitish semiliquid matter. These lesions are, on the whole, but little marked; these glands never present the degree of size and softening which they do in typhoid fever; and every thing tends to shew, that the alterations we have described are but secondary.

Spleen. The remarks we have just made, may also be applied to the spleen, which bears a great functional analogy to the mesenteric ganglia; and which, in many diseases, as in typhoid fevers, exhibits a parallel series of alterations. In twenty-four of the thirty-eight algide cases, the spleen was

notably enlarged ; and in seventeen of these, it was somewhat softened ; in six, there were brown-red ecchymotic spots scattered through it, and in three there were apoplectic clots. In the twenty-two cases of longer duration, it was seven times increased in size, eight times simply softened, and five times ecchymosed in the interior, in different cases. The increase was, in most cases, confined to an augmentation of its size by one-half, but sometimes it was doubled. Softening was rarely well marked ; the colour was almost always reddish. The spleen also presented, in at least one-third of the cases, adhesions at its convex surface, with cartilaginous transformation, or thickening of the capsule. This membrane was also flabby and shrivelled in most of the cases, with augmentation of volume ; this, as well as its reddish tint and flattened form, totally excludes the idea of turgescence of this organ. The ecchymotic spots were mostly confined to separate portions, anteriorly as often as posteriorly. The apoplectic nuclei were generally situated in the vicinity of the capsule, and sometimes could be seen through it ; they were of a red-brown colour, hard, compact, few in number, varying from the size of a hazel-nut to that of a pea. Sometimes they were gradually lost in the neighbouring tissues ; at other times, their limits were abruptly defined. At first sight, one would say, from the density and increased resistance of the tissue, that there was a change of long standing. In one case, a spleen, 12 centimètres in length by 7 in breadth, presented from fifteen to twenty apoplectic nuclei ; in the same case, a group of small brown-red ecchymoses, from 1 to 2 millimètres in diameter, were seen towards the middle of the concave surface.

It will be observed, that we consider those lesions peculiar to Cholera, which, although very rarely present, have a common origin with those which are frequently observed in other organs. We shall soon see how important it is especially to take into consideration the sanguineous infiltrations, ecchymoses, and apoplexies, since they are produced in the nervous centres as well as in the lungs, liver, and loose areolar structure of the spleen. We will here only remark, that in no organ can the coincidence of these hyperæmic conditions with the absence of all general congestion, be better observed than in the spleen.

Liver. The liver is congested in different degrees in so many diseases, and the alterations presented by this organ are involved in so much obscurity, that it is difficult to determine what relation the lesions we are about to describe bear to Cholera. In thirty-eight algide cases, the liver was notably congested twenty-five times ; softened throughout, four times ; and nine times, it presented brown-red spots like ecchymoses. In twenty-two cases with or without reaction, it was congested fourteen times, and softened, four times. In all these cases, the lesions were most marked at the right side and behind, and in almost all the cases there was evident injection and softening in this region ; the brown-red spots were there more extensive and more confluent. We met with, in three cases, apoplectic lobules of a centimètre in extent, of a deep red colour, never exceeding two or three in number, situated at the surface of the liver, and penetrating into its substance. The hepatic tissue was friable at this point, disappeared under the slightest pressure, and exposed a rounded cavity with shaggy walls. With this alteration, the brown-red spots have a close connexion. In many cases there were, on the convex, and sometimes on the concave aspect of the liver, brown-red arborisations, with large and short branches, forming, with the non-injected spaces included between their anastomoses, a tolerably regular appearance of mosaic work. In some cases, almost all the convex surface had this appearance ; in twelve out of sixty cases, these almost ecchymotic arborescences were disposed in bands parallel with the ribs, corresponding to the intercostal spaces, while the parts opposite to the ribs were pale or less injected. In the nine cases with brown red spots, these injections, instead of being connected

by anastomoses, were in large isolated grains. We often found, at the same time, vessels arranged in a radiated manner, with numerous striæ. Within the hepatic tissue the same anatomical appearances were seen, but less distinctly than beneath the capsule. In ten out of sixty cases, the peritonæum on the convex surface presented traces of old inflammation; in three, there were cartilaginous patches; in two, there were nearly general adhesions with the diaphragm; and in five, the serous membrane was whitish, being either smooth, deprived of its polish, or covered with a cellular network. In all these cases, the tissue of the liver was little injected, yellowish, and very dense. The surface of the different sections of the tissue was usually yellowish or scarcely coloured towards the left, but uniformly reddish, or of a wine-red colour in other parts of the organ. The large vessels yielded, on pressure, reddish or deep red blood; always fluid; the blood was semifluid, and of a brown-red colour only in those parts where the isolated or arborescent dotting of which we have spoken was almost confluent. In three out of seventy-five autopsies we found the peritonæum raised like a phlyctena, by reddish fluid blood.

On comparing the lesions found in the liver with those found in the lungs, we are struck with the different intensity which they present. Of these two important capillary systems, the one supplied by blood which has already furnished the intestinal exhalations and secretions, the other by that which returns from the whole system, where the loss of the water and other constituents is not well pronounced, and often not even perceptible,—it is the latter which presents the most marked changes of the blood, in connection with far-advanced lesions of tissue. How can this fact be reconciled with the opinion of those who pretend that the modification of the blood is the result of the intestinal evacuations? How can we understand, by this hypothesis, the reason why the blood of the portal vein and of the liver, which ought to undergo the first and most extensive alteration, exhibits it in a less degree, at least as regards its physical properties, than that found in the lungs, heart, and large vessels? These questions can only be decided by a comparative analysis of blood obtained from these different tissues. We do not attempt to give an opinion here; but will content ourselves with proposing the problems, and pointing out another difficulty in the delicate and still contested question of the pathological evolution of Cholera.

Icterus has been found associated with Cholera in a large number of cases; and it evidently bears a relation to the hepatic congestion of which we have been speaking. And an equally true and ingenious clinical interpretation leads us to consider it as a critical phenomenon. All the jaundiced cases have recovered; and M. Lévy has laid it down as an axiom, that in Cholera the patient recovers who becomes yellow. The repletion of the capillaries by simple engorgement, which, if permanent, is sufficient to abolish life by arresting everywhere the organic functions, explains perfectly, why, when it ceases rapidly, there is that abrupt return to health, which often occurs in Cholera. These sudden transitions from health to disease, and also from disease to health, can only take place where the structure of the organs has undergone no considerable change: and in this respect Cholera furnishes most useful instruction. In this affection, more than in any other, we see the restoration to health accompanied by the most decided critical phenomena. We have just mentioned icterus, the occurrence of which is no doubt intimately connected with the re-establishment of the capillary circulation of the liver; we would at the same time call to mind the crises by diaphoresis, or diuresis, which recognize an analogous origin; as they all coincide with the gradual restoration of the circulation in the congested and obstructed capillaries.

Kidneys. These organs were highly congested in 25 of the algide cases, and in 16 of the others; in 3 they presented, in the torpid period, an in-

crease in size, with yellowness, of the cortical substance. The calices and pelvis were injected in nearly all the cases ; rarely ecchymosed. The tubular and mammillary substance was of a brown red, almost blackish colour, especially in the torpid cases ; and yielded from the extremities of the cones, a yellowish or whitish, mucous, sometimes quasi-purulent matter. This semi-liquid substance was found in the calices, pelvis, ureters, and bladder, of different degrees of consistence and appearance. In five or six cases at least, during the period of reaction, we pressed out from the mammillæ, along with this perverted urinary matter, some very fine yellowish oily drops, which floated on the surface of the liquid. With regard to the congestion of the cortical substance, we have observed, in the algide, and sometimes even in the torpid stage, no very remarkable increase of size, but generally a slight diminution of consistence. Within the capsule, especially on the posterior surface, are seen numerous blackish red arborescences ; sometimes entire portions are of a slate-blue or indigo-black colour. On cutting the cortical substance parallel to its surface, it presents a very abundant dotting of large grains, from which blood can be squeezed. The perpendicular sections present large parallel vascular lines, approaching each other from without inwards, with transverse striæ. The numerous open mouths of the vessels between the cortical and tubular substance yielded black thick blood. Are these alterations the cause of the cessation of the secretion of urine ? We think so, on account of the obstruction and stagnation of blood in the capillaries. The same cause entirely or partly accounts for the presence of albumen in the urine, a phenomenon which may also occur in numerous cases under the influence of slight congestions.

Another very important change, with which we have rarely met, is the increase of size, with yellowish transformation of the cortical substance. In a torpid case, of six days' duration, where this lesion was well marked, the kidneys presented, at the surface, very fine stellated arborisations, with ecchymotic dotting on a clear yellow ground. On section, the two substances were very abruptly defined ; the cortical substance was pale, yellowish, and notably tumefied, while the cones were of a brown-red colour, almost ecchymotic. The mammillæ were black, and yielded abundantly on pressure a semi-fluid, yellowish, matter, with drops of oil.

We have in Cholera, without doubt, one of the best characterized phases of albuminous nephritis. The characters of the primitive alteration of the kidney in cholera, are, well-marked hyperæmia, with cessation of the urinary secretion, or with albumen in the urine. From these, no doubt, all the changes peculiar to Bright's disease might arise, and continue during convalescence. We here see one of the points of analogy between Cholera and a great number of other affections, especially eruptive fevers. We find here also the anatomical explanation of choleraic albuminuria, which has been observed in 511 cases out of 697, in the Hôpital du Val-de-Grâce ; and also of complete suppression of urine, observed in 149 cases, and of polyuria, which has been noticed in 111 cases.

Brain. The following table exhibits the lesions observed in this organ.

Thirty-eight algide cases, varying from six to forty-eight hours.

Pia mater.	CASES
Well-marked very fine injection	34
Sero-sanguineous suffusion	33
Serous infiltration	1
No injection of large vessels	1
Normal appearance	2
Not observed	1
Cortical substance.	
Hyperæmia	1
Rosaceous in parts	4

Cortical substance continued.	CASES
Rosaceous, with fine dotting	5
Rosaceous, and dotted with large grains	3
Appeared as if bruised	1
Simple fine superficial dotting	3
Ash-coloured, pale	2
Somewhat softened in different parts	1
Not observed	16
Normal appearance	3

Medullary substance.	CASES
Moderately dotted	14
Finely dotted	12
Very finely, but partially dotted	1
Rosaceous in parts	1

Medullary substance continued.	CASES
Increased consistence	3
Diminished consistence	3
Not observed	4
Normal appearance	5

Twelve cases with torpid reaction, varying from five to ten days.

Pia mater.	
No injection	6
Evident fine injection	5
Sero-sanguineous suffusions	8
Serous infiltration	4
Not observed	1
Cortical substance.	
Obscurely dotted	2
Rose-coloured in parts, with fine dots	2
Dotted with large grains	1
Localized pulpy softening	1

Cortical substance continued.	
Pale	1
Consistency increased	1
Not observed	5
Medullary substance.	
Moderately dotted	4
Finely dotted	5
Ecchymotic dots	1
Cerebellar apoplexy	1
Extensive softening	1
Pale	1

Seven cases with weak reaction, not freely established ; sometimes somnolence, sometimes delirium, with algidity. Duration, three to four days.

Pia mater.	
Injected	5
Sanguineous suffusion	5
Serous infiltration	3
Cortical substance.	
Rose-tint, with yellowish and brown-red reflexion	1
Simple rose-tint	1
Superficial partial dotting	1

Cortical substance continued.	
Ash-coloured	1
Normal	1
Not observed	2
Medullary substance.	
Finely dotted	4
Moderately dotted	3
Consistence increased	2

Three cases without reaction, cyanosis and algidity persisting ; duration, four, six, and ten days.

Pia mater.	
Finely injected	3
Sanguineous suffusion	3
Cortical substance.	
Partial superficial dotting	1
Consistence increased	1
Not observed	1
Medullary substance.	
Finely dotted	2
Dotted with large grains	1

We observe, first, that the injection of the membranes, which was almost always well-marked in the first stage, partly disappeared during reaction, during which serous infiltration increased ; and, at the same time, the sero-sanguineous effusions were re-absorbed. In 38 algide cases, we 34 times found fine injection of the pia water, 33 times sero-sanguineous suffusions, once serous infiltration ; while, in 12 torpid cases, 5 times only the injection was well marked, 8 times there were sero-sanguineous suffusions, and 4 times serous infiltration. In the 7 cases where reaction, though feeble, existed, serous infiltration was found 3 times ; and in the 3 cases without reaction, this sub-arachnoid œdema was not noticed. The injection of the pia mater was always of a more or less deep red, sometimes of a wine colour. The sanguineous suffusions chiefly occupied the lower half of the lateral surfaces, and were equally abundant anteriorly and posteriorly. They sometimes occupied also the base of the brain, especially the inferior surface of the anterior lobes, the posterior part of the cerebellum, and the outline of the peduncles. Pressure with the scalpel dispersed them into the loose tissue of the pia mater. Serous infiltration was sometimes met with above the superior vermiform process ; in all these cases it was slight, and was chiefly manifest at the convex and superior part of the hemispheres.

The lesions of the grey cortical layer are the most frequent alterations of the brain in Cholera. In 22 algide cases, where it was examined, after the pia mater had been removed, and it had been washed with water, it was 3 times normal, twice pale, 15 times partially rosaceous or dotted, once it

appeared bruised at one point, once it was softened in different places. In 7 torpid cases in which it was carefully examined, it was once pale, once presented ecchymotic dotting, once pulpy softening, and 4 times local dotting or rose-tint. It seems then, that the alterations which take place in the grey substance during the algide stage, continue and tend to become more marked during the torpid period.

The medullary substance was found hyperæmiated in various degrees in 28 out of 34 algide cases; the consistence was diminished in 3, increased in 5; and normal in 5. Of the 12 torpid cases, 9 presented hyperæmia, 2 hæmorrhage, and 1 paleness.

We have also more carefully noted the state of the nervous centres in 16 cases, forming a new series of observations: 12 were algide cases, varying from twelve to seventy-two hours; and 4 torpid, varying from three to five days. The cortical substance presented, in 2 cases, remarkable paleness at the convexity, with ashy-white colour; in 2, a general rose-tint, most marked below; in 12, partial rose-tints, predominating at the anterior and inferior portion; in 4, orange-tints, extending over entire convolutions, or in small isolated spots. In most cases, the deep layer of the cortical substance was more coloured than the superficial; in 4 cases only, we observed the external part to be of a deeper tint at some points, the internal layer remaining pale, of a pearly grey. The rose-colour was sometimes, and the orange-tint always, superficial. The dotting and injection were always in relation with the rose-coloured appearance: they were sometimes confined to the deep, and more rarely to the external, layer. In most cases, they could be traced into the entire thickness of the grey matter; in some, the surface of the convolutions appeared as if superficially pierced with holes. The grey substance presented, as well as the simple very fine dotting, and that in large ecchymotic grains, various intermediate degrees. These were always localized, generally on the anterior and inferior parts, on the convexity, and on the anterior and inferior extremities of the middle lobe; in 2 cases we noticed ecchymotic spots in large grains, once with pultaceous softening of the cortical substance; in 2, a brown-red, almost confluent dotting, extending over 3 or 4 millimètres; in one, an almost confluent deep red dotting, extending into the neighbouring medullary substance; and in 8, partially scattered fine dotting. In 2 cases, the cortical layer seemed increased in thickness; and in 4, it was notably softened, and was torn up with the pia mater. In the medullary substance (centuam ovale), were found analogous, but less strongly marked appearances; in 2 cases, there was almost confluent fine dotting, with insulated spots of a diffuse light violet-colour; in 6, there was abundant fine dotting, especially in the posterior third of the centrum ovale, but less marked in the anterior, and still less in the middle third. From the dotted surface of various sections of the brain, there were seen to exude, after exposure to air for some time, large drops of rose-coloured or clear red liquid blood.

On the surface of the ventricles, there were more strongly-marked lesions; in 6 cases, there was considerable turgescence of the ventricular vessels; in one, there was also sanguineous suffusion along the course of the vessels; in one, localised sanguineous infiltration of the choroid plexus; in one, sanguineous suffusion on the surface of the left corpus striatum, with subjacent dotting, in large grains and fine points, generally more marked on the left side than on the right; in one, brown-red injection of the fourth ventricle with ecchymotic dotting; in one, very distinct rosaceous injection in the whole posterior part of the right ventricle, with abundant fine dotting in the vicinity of the fornix; in 2, there was softening of the posterior part of the fornix; in one, the lining membrane of the ventricles was easily detached.

The general consistence of the brain was notably increased in 4 cases; in one, the convex surface of the hemispheres, and the internal surface of the ventricles, were of abnormal hardness, coincident with thickening of the arachnoid: this was no doubt the effect of an old inflammation. In the other

cases, the consistence of the brain was such as might be expected, at the time when the examination was made—6, 12, or 18 hours after death. The arachnoid, in 5 cases, presented a whitish pearly aspect ; it was glutinous, and a little thickened in these cases. This alteration was more appreciable in the spinal canal than around the brain : the serous membrane, where it had become slightly whitish, could be seen distinctly at points where it is difficult to perceive it, from its transparency and thinness. In a small number of cases, some very fine whitish granulations were met with on the convex surface of the brain ; they were situated in the deep layer of the arachnoid, and were scarcely visible after the removal of that membrane.

Putting aside the lesions of the membranes, as being met with in many other diseases, and hence not characteristic of Cholera, we find, in the cerebral substance, a group of lesions peculiar to Cholera, and not hitherto noticed. These alterations are all referable to one law. They all denote a tendency to hæmorrhage in the nervous centres. A question here arises : Do these choleraic lesions stop at the hæmorrhagic dottings, or at partial softening ? May they not in some cases, as in the lungs and other organs, extend into considerable spaces, and form true foci of apoplexy and softening ? The following case, in which we find all the different degrees, from congestion to capillary apoplexy and hæmorrhage, entirely removes all doubt on the subject.

Case. "Metté, a veteran non-commissioned officer, aged 45 years, 22 years in the service, of medium constitution, slender muscular development, grey hair, was in perfect health when seized, on the 13th of June, with diarrhœa. On the 16th, he had cramps and vomitings. On admission into the hospital, he had involuntary stools ; face cyanosed and cool ; eyes very hollow, surrounded with a bluish circle. 17th. Pulse thready, voice lost, extremities cold. 18th. Pulse 80, thoracic constriction, colour of face almost normal, no orbital excavation. 19th. Temperature good, pulse 66, small, face coloured, no headache, no urine, hyperæmia of conjunctivæ. At 9 P.M., transient delirium, hiccup. 20th. Pulse 72, skin clammy, face somewhat of a violet-colour, superficial veins distended, vague look, no sustained attention, answers only "no", respiration stertorous, as if apoplectic ; (12 leeches to the temples, sinapisms, and cold applications). 21st. Pulse 70, soft, face red and swollen, eyelids hyperæmiated, vacant look, hiccup, jerking respiration ; (20 leeches, and cold compresses). *Evening ;* in same condition ; (blister to nape of neck). Died at 1 A.M. on the 23rd. The autopsy took place nine hours after death. *Skull.* The dura mater was externally pale. There was a pretty large quantity of citrine serosity at the base, in the cerebellar fossæ. There was sub-arachnoid serous infiltration at the convexity ; rosaceous or wine-red infiltration on the lateral and inferior surfaces of the hemispheres, as well as on the posterior and inferior parts of the cerebellum. The inferior surface of the left hemisphere of the latter organ, presented, in the space of a square millimètre, an apoplectic clot, the dark blood of which, being only partially coagulated, communicated with the neighbouring sub-serous effusions. The nervous substance around the irregular evacuation was reddish, and presented dotting with large grains, and a pulpy appearance, like a strawberry. Forty grammes of sanguinolent serum were found in the ventricles of the brain : the posterior part of the fornix was a little softened : the dotting was very fine and almost confluent on the sections of the centrum ovale. Rosaceous suffusions were observed on some convolutions of the convexity, and on the posterior part of the right hemisphere. At the middle of this hemisphere, between two convolutions, was found a small brown-red clot, as large as the head of a pin. *The grey substance, when dissected round this point, was found infiltrated with blood, ecchymosed, and softened, for the extent of half a centimètre.* The adjacent white substance was also a little altered. Although the brain, as a whole, was flabby, the cerebral pulp itself was of tolerably firm consistence. The pia mater was easily raised from the anterior part of the right hemisphere ; posteriorly and laterally, it drew up with it considerable portions of the soft-

ened cerebral pulp. The grey substance presented a wine-red tint on the convolutions, with very distinct dotting in points; the subjacent medullary substance was reduced into a pulp, for a thickness of from 1 to 5 millimètres."

If we compare this case with two of cerebral apoplexy observed by M. Lévy, and published in the *Gazette des Hôpitaux* for 7th July, both with albuminous urine, one with rice-water liquid and abundant psorentery in the intestines, the other with ecchymosis of the heart and psorentery confined to the upper part of the small intestines, it will seem probable that Cholera acted here as an exciting cause of hæmorrhage, in subjects predisposed by age.

Medulla. In the notes of the first 60 autopsies, we find the following observations. In 5 cases, the medulla presented no remarkable appearance; in the 6th, there was *ecchymotic dotting, with softening of the adjacent pulp.* After this, we carefully examined the spinal medulla in 13 autopsies, in the following manner: 1. The medulla was raised with the dura mater, and the latter was cut through longitudinally. 2. The medulla, being laid on its posterior surface, the neurilemma was divided longitudinally through its whole extent by means of a pair of fine scissors. 3. The anterior commissure being apparent, the section was completed by means of a sharp scalpel. 4. The consistence of the different parts of the two halves of the medulla was studied under a stream of water; if softening existed, its extent was at the same time recognized. 5. Each of the halves was unfolded, by separating the medullary columns which meet in the middle line, in a layer of grey matter of unequal thickness. By this latter operation the whole of the grey substance was brought into view, so that its injection, dottings, and ecchymoses could be studied.

In 4 cases, there was congestion of the rachidian sinuses; in 6, blood was extravasated in the rachis, especially round the origin of the sheaths furnished by the dura mater; in 3, moderate injection of the vessels of the medulla; in 4, fine injection, in one of which it was confined to the inferior half; in one, there was rosaceous subserous effusion at the commencement of the dorsal region. In the nervous substance, we 3 times found the consistence normal; 8 times partial softening. In 5 of these the consistence was diminished in the cervical region. In one of the remaining cases there was marked softening at the middle of the dorsal region, so that the jet of water easily dissected out the medullary fibres as far as the middle of the cervical region, where there was found a brown-red dotting formed of effused and coagulated blood; in one, there was softening for a centimètre at the end of the cervical region; and in the same subject, there was marked softening for 2½ centimètres at the commencement of the dorsal region, and fine ecchymotic dotting with rosaceous suffusions more marked on the right side; in the third case, there was softening in the middle of the cervical region, with fine dotting of the medullary columns. In all the cases where the white matter was found altered, the grey matter was the seat of corresponding and more strongly marked lesions. Of the 13 cases, one presented only a slight rose tint at the inferior enlargement; in 4, there was a general rose-colour, with fine injection, dotted in unequal grains and violet suffusion; in 3, there was fine dotting; in 3, tolerably large clear red dotting, between the grey substance and the medullary columns; in 1, there was, at the middle third of the cervical region, red colouration with abundant large granular brown red spots (ecchymose of a millimètre in extent, where the blood was liquid); and in 1, the lower part of the cervical region present, for the length of two centimètres, groups of small ecchymoses to the number of ten or twelve on a section; the largest contained fluid blood, and were a millimètre in diameter.

To give a good example of all the lesions we have just enumerated, we transcribe the result of an autopsy performed at the Hôpital du Val-de-Grâce, on 23rd of August, seven hours after the death of a patient in the algide stage; it had lasted 48 hours.

Spinal canal. There was much blood in the sinuses; sanguineous infiltration of the fatty tissue; the arachnoid slightly whitish, opalescent, viscous.

Well marked injection of the spinal vessels which ramify in the pia mater. On a longitudinal section of the medulla, there was observed very fine injection of the grey substance, with a rose tint. At the end of the cervical portion, several blueish spots appeared in the medullary substances ; on cutting into these, small ecchymoses, of the size of from one to two millimètres, were found. The grey matter presented severe lesions in the whole extent of the cervical region. There was in this part, a dotting of unequal bright red irregular grains, often touching each other. These changes were mostly more marked on the left side than on the right. On the right side, for the extent of a centimètre, at the level of the third cervical vertebra, there was found a confluent bright red dotting. There was a single small ecchymosis in the medullary chords of the two lower thirds of the medulla. The examination of the medulla under a jet of water shewed still better these ecchymoses, which were situated most plentifully in the cellular network which separates the grey matter from the medullary columns, and shows that the upper third is notably less firm than the other parts ; for it more easily becomes flocculent, especially on the left side.

We find, then, that in Cholera, the medulla is often the seat of very important lesions at its upper part, due regard being had to its delicate structure, and to the less important alterations in this centre of the nervous system. If these softenings and ecchymoses were met with in all cases, instead of in two-thirds, we should have an explanation of the fatality of Cholera; but in some cases they are wanting. But we cannot forbear associating with these affections, the nervous symptoms,—cramp, thoracic constriction, dyspnœa, vertigo, noises in the ears, affections of the sight, in the cerebral prodromata which M. Lévy has observed in a large number of cases.

All these new or scarcely noticed facts, might doubtless yield matter for many theories ; but, fearing to mix with our researches hypotheses which can lead to no positive result, we will be sparing in our inductions.

Conclusions. In this rapid review of the anatomical lesions produced by Cholera, we find the two following facts evolved, in a parallel manner.

1. A peculiar form of congestion, simple, or accompanied with hæmorrhage.
2. The phenomena of intestinal secretion.

Neither of these can be considered as the predominant affection ; although produced under the general influence of the same specific cause, they have each an independent progress, and are far from being of proportionate severity. On viewing these lesions with regard to their origin and extent, the choleraic congestion seems to affect an intestinal localisation; it appears with the prodromata, and proceeds sometimes slowly, sometimes with formidable suddenness. Its peculiar characters, which we have pointed out, the special alteration of the blood which accompanies it, its preference for the important parenchymatous organs,—the heart, lungs, liver, brain, and especially the spinal medulla,—make it the phenomenon which best discloses the general action of the morbific cause. Does this cause act primarily on the blood, on the nervous system, or on the walls of the capillaries, and on the tissue itself of certain organs which are affected with general or partial softening ? None of these hypotheses is justified by facts. The conclusions to which the most minute anatomical investigations tend, is, that Cholera, instead of commencing in this or that system, attacks simultaneously all the tissues, and at the same time exercises a special and undefined action on the blood in the capillaries. But though the verification of all these changes be essential to the pathology of Cholera, and to the comprehension of the phenomena of the algide and the torpid periods, it does not aid us to understand the intimate nature of the specific cause which engenders the disease; we see, in our anatomical researches, the effects, and not the cause of the disease. To overcome this difficulty, we must wait till various observers have, in the course of time, contributed the results of their researches on different epidemic affections ; then a compa-

rison can be established on a sure basis, and the work of nosological classification may commence.

All artificial classifications necessarily err, when an attempt is made to determine the nature of those great epidemic scourges which have several local effects and a general action, very strongly marked at the same time. We are too little advanced in the study of anatomical or functional alterations, to indicate the coordination of the numerous phenomena of which we have described the results,—the direct or indirect products of Cholera. It is better, in the actual state of our knowledge, to renounce all attempts of this kind, which will only end in reproducing, under a new face, the fruitless essays of our predecessors. *Cholera inter intestina stomachumque versatur; ita ut cujus potissimùm partis sit, non facile dici queat.* This sentence from Celsus well expresses the doubt which exists at the present day. Localised at first in the colon ; then considered as a disease of the bile by Hippocrates, Galen, Celsus, and Cœlius Aurelianus ; better studied afterwards, but always exclusively referred to the intestinal mucous membrane, Cholera would appear to us in the present day as a primitive affection, *totius substantiæ*, resembled by nothing in the outline of its symptoms, or in the order of its anatomical changes. To arrive at general conclusions as to its nature, it would be necessary to compare, in a certain number of epidemics, the anatomical alterations with one another, as well as with what is positively known of the anatomical state of the nervous centres in other epidemic diseases, and then to study the circumstances, as all facts tend to demonstrate, which give rise to this epidemic scourge. We should then have a collection of facts, from which would arise, for Cholera as for other epidemic affections, the elements of a natural classification, towards which the principal efforts of observation should be directed, and towards which should tend all researches which are intended to remain in the history of science.

VIBRIONES IN THE INTESTINAL DISCHARGES AND MUSCULAR TISSUE OF CHOLERA PATIENTS.

In the paper on the Intestinal Discharges in Cholera, by Dr. Parkes, published in the London Journal of Medicine for February, vibriones are mentioned as having been found in the stool of a Cholera patient, by Dr. Jenner ; and in another case, they were found in the first urine passed after the commencement of reaction, after it had been standing for some hours.

Since that period, other observers have noticed a similar appearance. In the *American Journal of the Medical Sciences*, July 1849, is the following communication from Dr. Waldo Burnett, which was read at a meeting of the Boston Society for Medical Improvement, on June 11th, 1849.

" On Sunday, June 3rd, a man at the northern part of the city was attacked with the premonitory symptoms of Cholera. The case ran a rapid course, and in a few hours he was in a state of collapse ; on the next morning, at ten o'clock, he died. A post-mortem examination of his body was made, on the afternoon of the same day, at half-past three o'clock. At this autopsy I secured a quantity of the ' rice-water' liquid found in his intestines ; also a portion of one of the pectoral muscles. These specimens I submitted, on the morning of the 5th, to careful and repeated microscopical examinations, and obtained the following results.

" 1st. *Rice-water Liquid.* This was found loaded with epithelium of both varieties, viz., the *cylinder* epithelium, and the *tesselate* or pavement epithelium. These cells were floating about, not only singly, but in large flakes, of one-thirtieth to one-tenth of an inch in size, and attached uninjured to the ' basement membrane' from which they grow ; so that it would appear, that this ' basement membrane' had been stripped off, bearing the cells upon it. The cloudiness and opacity of this liquid seemed entirely due to the presence of immense quantities of these epithelial cells, since no mucous corpuscles, or any other corpuscles whatever, as well as no shreds of lymph,

could be detected from repeated examinations. It is well known that the *tesselated* or pavement epithelium covers the mucous membrane of the mouth and œsophagus, while the mucous membrane of the remaining portion of the alimentary canal is covered by the cylinder epithelium. Therefore the presence of both varieties of this epithelium in these discharges, would show that they came from the surface of the *whole* of the alimentary canal, instead of from its intestinal portion only. Loitering here and there, in the field of the microscope, was an occasional crystal of the *oxalate of lime*. For a long time I could perceive nothing in this liquid but the two substances just mentioned, viz., the epithelium and the crystals of oxalate of lime. But, after increasing the power of the instrument, a third element appeared, and was then so apparent, that I greatly wondered I had not before seen it. This was the presence of thousands of thousands of *animalculæ*, swarming and sporting about in every direction. For a time, I thought that this must be a mere accident, but very many subsequent examinations afforded the same results; and, that I might not be the only persons to vouch for their presence here, I showed them to my friend, Dr. D. H. Storer, of this city, who made the remark, that he distinctly saw them 'writhing about.' By a power of five hundred linear diameters, they could clearly be seen, some as *linear* moving bodies, others having a more globular character—the former seeming to be only a linear aggregation of the latter. They seemed, therefore, to be *vibriones*, and by measurement, the single animals were from 1-16,000 to 1-20,000, and the compound chain-like animals were from 1-8000 to 1-4000 of an inch in diameter. I state these facts in this precise manner, since some, it is probable, may think that all this is simply the *molecular motion* so often observed in the secretions. But that they were distinct animals having voluntary motion, I have no doubt, since Dr. Storer as well as myself saw them moving in a serpentine manner over the field.

"2nd. *Muscular Tissue.* Not thinking of seeing any of these appearances, I examined a small bit of muscle, with reference to ascertaining, if possible, on account of the involuntary muscular contractions during life, the proximity of the *striæ* of their *fibrillæ*. But my perception of these relations was not very acute, from my astonishment to find in this tissue these same animalculæ in great numbers. A little distilled water, used to soften the tissue, brought out great numbers of them into it, so that they were seen, as in the intestinal liquid, sporting about hither and thither. In these examinations, all possible care and precaution was used, to prevent the introduction of any foreign bodies into the field of observation. The great fact to be borne in mind, as the result of these examinations, is that the same *animalculæ* were found in great numbers, both in the intestinal liquid and in the muscular fibre. And the fact of their being in the muscular fibre would argue, I think, decidedly against the supposition of their mere accidental presence in the liquid of the alimentary canal.

"I much regret that, before these observations were made known, I should not have had the advantage of more specimens from patients who have since died here of this disease. And although it may seem premature that these results from a *single case* should thus be made known, yet they are exposed as simple facts, and upon future examinations I shall rely for the proof, either, on the one hand, that these *animalculæ* were simply *accidental* to *this* case alone; or, on the other hand, that their presence is constant in this disease; and if the latter be found to be correct, as would seem thus to have been foreshadowed, there will then be sufficient time to attempt to trace their *causative* relation with this dire disease now among us. Furthermore, should future investigations show that these *vibriones* are equally common in the tissues and secretions of patients dying of other diseases; in other words, that their presence in this disease is not specific; yet the above note will not, perhaps, be considered without value—since it may serve to call the attention of better observers than myself to this interesting subject."

UREA DETECTED (?) IN THE RICE-WATER EVACUATIONS OF CHOLERA.

Dr. Henry Johnson, of Shrewsbury, has published, in the *Provincial Medical and Surgical Journal* for Sept. 19, a paper, the object of which seems to be to show, "that urea is contained in the discharges from the bowels, in Cholera patients, at a time when the secretion of urine is suppressed, or, I ought rather to say, retained." He considers that it is a "new fact"; at least he can find no record of it in any work to which he has had access. Dr. Johnson's paper suggests several remarks: 1. He does not give us sufficiently absolute proof that the stools were entirely devoid of admixture with urine. 2. His description of the crystals is not an accurate description of the crystals of nitrate of urea. 3. His inadequate observations are not sufficient to set aside those of Garrod, Parkes, and others, who have failed to obtain any trace of urea in the dejections passed by Cholera patients in the state of collapse. 4. Dr. Johnson ought to have stated the stage of the disease in which the observations were made; because we conceive it quite possible—nay, even very probable—that after reaction commences, urea may be thrown off both from the mucous membrane of the bowels and from the skin, while it is very difficult to understand how it should exist either in the excretions of these organs, or even in the blood itself, during the algide stage, when all the functions are at a stand-still,—when, according to the best observations, there is really no urea formed. We cannot help saying, that it would have been better had Dr. Johnson refrained from publishing his observations, till he could show, more satisfactorily, their value. Hasty and imperfect experiments are not sufficient to set aside general doctrines, established by the accurate and independent observations of our most accredited organic chemists. With these prefatory remarks, we subjoin Dr. Johnson's paper.

Dr. Henry Johnson's Communication. "*a* About two or three fluid-ounces of the rice-water evacuations of a man, ill of Cholera, were evaporated to dryness in a steam-bath.

"*b* Distilled water, heated to 200° Fahrenheit, was poured upon the dry mass (*a*), broken up with a spatula, and the mixture was digested in a steam-bath for about half an hour.

"*c* The digested fluid (*b*) was filtered, and the filtered fluid was evaporated again to dryness in a steam-bath, and the residue digested with a considerable proportion of absolute alcohol, at a greater heat, for half an hour.

"*d* The digested liquor (*c*) was again filtered, and the liquor evaporated to dryness.

The dry mass (*d*) was now dissolved in a small portion of warm distilled water. It was concentrated, by evaporation, to the consistence of a thin syrup, and a few drops of nitric acid added. A slight effervescence took place; and, having been set aside to crystallize, the next morning I saw *distinct*, long, crystals, which could be nothing else but *nitrate of urea*.

"The foregoing process is that given by Dr. G. O. Rees (*Analysis of Blood and Urine*, p. 38), for the examination of blood supposed to contain urea.

"I have good reason to believe that no urine was passed with the evacuation now examined. The man from whom it was procured, was, at the time, in the early stage of the disease, and had suppression of urine, and was not known to pass any until a day or two afterwards. I determined, however, to repeat the experiment, and I therefore sent to a union workhouse in the neighbourhood, where the cholera was still raging, to procure another specimen of the rice-water evacuation, requesting that every precaution might be used to obtain it in the proper stage of the disease, and free from admixture. The same process was followed with this second specimen; and I obtained a fluid, which, on gentle evaporation, after the addition of nitric acid, deposited abundant crystals. These appeared, under the microscope, as beautiful 'thin rhombic plates'; but the acute angle was not 'replaced by a small plane', as described by Ragsky. (*Dr. Ranking's Half-Yearly Abstract*, vol. ii, p. 356.)

"There is, therefore, I think, no doubt that *urea* is contained in the discharges from the bowels in cholera patients, at a time when the secretion of urine is suppressed,—or, I ought rather to say, retained. I believe that this is a new fact,—at least, I can find no printed record of it in any work to which I have now access.

"Professor Simon (*Animal Chemistry*, Sydenham Society's edition, vol. i, pp. 49 and 325) says that urea has been discovered, by four chemists, in the *blood* of cholera patients; but he makes no mention of it in the evacuations. Dr. Watson (*Lectures*, vol. ii, p. 552), after remarking the freedom of cholera patients from coma, when the urine has been retained for several days, says: 'Was the urine here drained off from the blood, in the enormous and unnatural flow from the stomach and bowels? I think it probably was; but I do not know that any chemical search was ever made for that substance in the fluids so effused.' These notices I have found since my experiments were made, at which time I was not aware that any one had even conjectured the existence of urea in (what appeared to me) a very unheard-of locality. The fact appears to me curious, and deserving of being recorded, if only for the sake of leading to further investigation. I have, at present, no opportunity of pursuing it further, as the cholera is subsiding in this neighbourhood."

DR. J. BUCHANAN, ON CHOLERA AS IT APPEARED IN NASHVILLE, TENNESSEE, U. S.

The following paper, which we extract from the *Boston Medical and Surgical Journal* for June 6th, 1849, as copied from the *Western Journal of Medicine and Surgery*, possesses several points of interest: viz., among others, 1, The period which elapsed between the arrival of the disease and its outbreak; 2, The bearing of some of the facts on the question of contagion; 3, The decided benefit derived from an alcoholic solution of camphor with laudanum; 4, The return of bilious discharges without the use of mercurials.

Dr. Buchanan's Memoir. On the 27th of December, 1848, the steamer Caroline Watkins, from New Orleans (where Cholera was prevailing when she left that port), arrived in Nashville, one death having occurred on board from Cholera. On her further passage, occupying about ten days, she lost eight persons from the disease. These deaths occurred among deck passengers and firemen, most of whom were foreigners, and, as represented, very imprudent under treatment; one or two of the deaths were among coloured persons. On her arrival, great excitement prevailed, and every one was anxious to learn, each from his own medical adviser, what must be done to prevent or cure its dreaded attack. Almost every family had the remedies at hand, and were well instructed how to use them at a moment's warning.

But for three weeks there was no appearance of Cholera, and the excitement began to subside, when on the 20th of January, twenty-five days after the arrival of the Watkins, and several days after the arrival of other boats on board of which there was Cholera, one case occurred in the lower part of the city, in a house almost surrounded by water; for at this time there was a great flood in the Cumberland, so that the upper and lower parts of the city were inundated. The occupants of the house in which this case occurred were of the lowest and most indigent class. This case, a man of intemperate habits, and who had exposed himself to the weather and in the water for several days, died in a few hours after his attack. On the next day, the 21st, another inmate of this house, and a fellow in all respects to the first case, was seized with the disease, but was immediately removed to comfortable quarters, where, under good medical advice and nursing, he seemed to be convalescent, but in a few days died from his own imprudence.

The third case occurred in the same house; another associate of the two first was seized on the 22nd, and was also removed, together with all the families who occupied the house, to better quarters in a more elevated part of the city. But, notwithstanding every effort was made to save him, he collapsed, and died in about thirty-six hours. This case I visited in its last stages, and recognized all the characteristic symptoms of Asiatic Cholera, such as I had before witnessed in 1833-34. The haggard but indifferent countenance; cold, blue, and shrivelled extremities; pulseless wrist; sunken, or almost lost, voice; with clammy sweat, were all present; as also rice-water evacuations, which clearly indicated the nature of the disease. From this time Cholera gradually increased; several more deaths occurred in this family and in the immediate neighbourhood. It also made its appearance in the upper part of the city, among a class of citizens much more comfortably situated, and greatly above high-water mark. The force of the disease seems to have been spent upon these two neighbourhoods, but several deaths occurred in the heart of the city, and a few of our most respectable citizens were carried off by it. One family, in which the disease appeared with great severity, lived in a good house in an open lot or field, upon an elevated situation in the suburbs of the city, and seemed to be remote from all city influences, or other cases productive from it. In this family two deaths occurred, and every member suffered from it. The black population and the lower classes of society, the most ignorant and indigent, were the greatest sufferers. About the 4th or 5th of February the disease reached its greatest height, and as many as four or five died in twenty-four hours. Previous to this time, from one to two or three deaths occurred daily, and after this the disease gradually declined, so that by the 26th of February we regarded it as at an end. The number of deaths were in all about forty or fifty.

During the prevalence of the disease almost every one in the city complained more or less of some uneasiness in the stomach and bowels. Hundreds suffered from diarrhœa; and some from dysentery, which, in a few cases, was very painful and difficult to cure. Many were afflicted with violent spasms of the stomach and bowels and abdominal muscles without discharges, similar to what we commonly call cramp colic. In some cases all the voluntary muscles were violently cramped; the spasms recurred at intervals of a few minutes, not unlike tetanus. Several cases of typhoid fever occurred during its prevalence, but the symptoms were not influenced by it in the slightest degree. In the month of December, and until late in January, our community all suffered more or less from a mild epidemic influenza. Only in a few instances did it appear in a violent form or require medical aid. When Cholera made its appearance it rapidly subsided, and very rarely did we witness a complication of choleraic symptoms with those of influenza.

You are well aware that several of our physicians here regard Cholera as contagious, and many of the most venerable of the profession will not admit of the existence of a case, without it can be traced to a contagious source, nor do they regard the diarrhœa or other disordered conditions of the stomach and bowels, as they have prevailed here, as at all premonitory of Cholera. I differ very, very widely from those who entertain such opinions, and think we have passed through an epidemic form of Cholera, which, compared to the epidemic of 1833 and 1834, was mild in its character, but which, except for the prompt and efficient means used to control it, would nevertheless have proved much more fatal than it really did. I considered the whole community as more or less affected by it, and advised all who consulted me to regard every symptom of disorder in the digestive organs, especially a diarrhœa, as premonitory of an attack; or, in other words, as the commencing or first stage of Cholera, and to use means at once to arrest it. Such also, I believe, was the opinion and advice of a majority of the physicians in our city. Here, then, are the causes of the boasted success in the treatment of the late epidemic.

1st. Our city was well cleansed and in good condition when it appeared.

2nd. Every family, who were able, were supplied with remedies, and were made aware of the nature of the first symptoms of the disease, and also of the best modes of living so as to prevent an attack.

3rd. The epidemic was mild in its character, and gave all fair warning, so much so, that even those who died might almost certainly have been saved, had their intelligence and means been sufficient to guard against its insidious attack. It is well ascertained that all those who died had diarrhœa, or other premonitory symptoms, for two or three days or longer before they applied for assistance. And some cases were even in a collapsed state before medical advice was sought. Few, if any, cases occurred suddenly and violently, as in the former epidemic. All those who applied to a physician in the first stage of diarrhœa were promptly relieved, and hundreds cured themselves with the remedies at hand, with which they had been previously furnished. and instructed how to use. Cholera, then, as it lately appeared at Nashville, was, when taken in time, curable in almost every instance.

The weather was neither very cold nor warm for the season. The thermometer ranged in January from 13° on the 6th, to 68° on the 30th, and was generally about freezing point at sun-rise, and 35° or 40° in the afternoon. But, for the most part, the weather was exceedingiy disagreeable, being moist, cloudy, and chilly, with wet and muddy streets, and with a flood in the river which reached its maximum height on the 22nd, being 45½ feet above low water mark. The third violent case of Cholera occurred on the 22nd, the day on which the flood was at its height.

The winds during this month were variable, but prevailed from the N.N.E. and S.S.E. The day on which the first case occurred was cloudy and drizzling rain. Thermometer 40° at sun-rise, wind S. and S.W. The balance of this month was cloudy and rainy, with a temperature generally above freezing point at sun-rise; and from 40° to 60° in the afternoon. The weather, during the month of February, was similar to January, but was colder and clearer, and the winds prevailed from the N.N.W. We had several beautiful days in February, with bracing winds and clear sky. The middle of the month was very cold; the thermometer on the 18th being 4°, and on the 10th ice formed on the ponds three and four inches thick, and our ice-houses were all filled. From this time the weather grew warmer, and on the 26th Cholera left our city. At present we are entirely free from the disease. The adjoining counties have suffered in a slight degree from diarrhœa and general disorder of the digestive organs.

Treatment. In all cases of premonitory symptoms, such as pain and fulness in the stomach, which was often complained of, and in diarrhœa, which was the most common symptom, I advised the use of the following mixture: R. Alcohol, 1 pint; gum camphor, ʒij. Dissolve, and add laudanum, ʒij; compound spirits of lavender, ʒij. Of this mixture, thirty to sixty drops were directed to be used upon a lump of loaf sugar, and repeated after each evacuation from the bowels; or in case of pain or spasm in the stomach or bowels, every half hour until relief was obtained. In many violent cases it was used in larger doses, and in cases of mere uneasiness in doses of ten to twenty drops repeated *pro re natâ*, as a preventive. I assure you it had the desired effect in all cases in which it was used, and hundreds cured themselves with it who suffered from diarrhœa, without the aid of any other remedy. In more violent cases, or where the diarrhœa and vomiting were suffered to run on without treatment until spasms in the muscles, prostration, and approaching collapse were evident, I used, in addition to the above, two or three-grain doses of opium, and repeated at intervals of one, two, or three hours, according to the urgency of the symptoms. The pill of opium was generally washed down with brandy and water, and as many as ten or twelve grains were administered in bad cases in twenty-four hours. In the absence of opium, laudanum was used with the brandy in teaspoonful doses; and in very urgent cases of spasms

and approaching collapse, all these remedies, together with sinapisms to the abdomen and extremities, and also hot applications to the feet and stomach, and other parts suffering from cramps and pain, were applied ; the patient all the while being well covered up in bed, and using hot sage, mint, or other teas, such as were most agreeable. This course of treatment was successful in every case that came under my own observation, except in two cases, and one of these was collapsed at my first visit. In no case did I use one grain of calomel or other mercurial, except in two instances, and then I believe with disadvantage. In the large majority of cases, the purging was checked at once by the above treatment, and the bowels were suffered to remain unopened for three or four days. At the end of this time, or earlier in case of pain or other disposition to stool without evacuations, a tablespoonful of castor oil, with fifteen or twenty drops of laudanum, generally produced a free bilious discharge, such as often follows a dose of calomel.

In some cases, however, a low typhoid state of fever comes on, with red and swollen tongue, feeble voice, sore throat, dry fauces, sighing, nausea, etc., which is always critical. I have no prejudice against the use of calomel in the treatment of Cholera or any other disease. On the contrary, it is my favourite remedy in the treatment of almost all diseases. I wish to state, however, a fact as observed in connexion with the late epidemic, which naturally gives rise to the reflection that, possibly, we place too much confidence in its powers in other diseases. I was surprised to see free bilious discharges without the use of some mercurial. But such was the fact in many instances from a dose of oil, and in many cases without the aid of any purgative ; and where the bowels had been confined for two or three days by the use of opiates, the first evacuations that followed were bilious, and the patients rapidly convalesced.

CALOMEL IN THE TREATMENT OF CHOLERA.

At one time, Calomel in enormous and often repeated doses was much confided in by our brethren in the East and West Indies in the treatment of all tropical fevers, including Cholera. Not a few still maintain and believe that it is the sheet anchor in yellow fever. Since, however, it has become generally known that most of the Calomel administered in large quantities remains inert within the bodies of those affected with tropical fevers, a change has taken place in practice, and a great saving of human life has been effected. This is allowed by all, who are conversant with the present Indian therapeutics, and with those in vogue some twenty years ago. It may be very true, that numerous recoveries take place after extraordinary quantities of Calomel have been swallowed ; but it seems far more rational, and more in accordance with facts, to suppose that, in these cases, there was no therapeutic action of the drug, and that the absence of fatal poisoning was simply the result of its remaining inert, and being ultimately got rid of as unaltered Calomel.

Especially strange does that plan of treatment seem to us, which recommends Calomel in large doses, or in smaller doses (one or two grains), repeated at very frequent intervals in the collapse stage of Cholera, *when life is at a stand-still ;* yet the Medical Journals, since the present outbreak, have teemed with glowing descriptions of its efficacy !

Dr. Ayre, a physician of Hull, is perhaps the most prominent advocate of the Calomel treatment of Cholera ; and if his treatment has been generally adopted in that town, the fact of the disease having been much more fatal than in other places, is perhaps explained. In a communication to the *Lancet* of October 28th, 1848, he says :—

" Calomel in one or two grain doses, taken with one or two drops of laudanum, and repeated every five or ten minutes, for several successive hours, with an occasional omission of the laudanum at intervals, formed my exclusive remedy for the blue or collapsed stage in all the cases I attended. I scarcely used a single auxiliary means of any kind. I neither bled, nor gave stimulants, nor emetics, nor used the air-baths, nor frictions, except to

relieve the cramps, nor did I resort to any but the ordinary means for supporting the temperature or strength of the system. I gave only Calomel, and in the dose and manner described, and placed no other limit to the use of it, than that which was placed by the disease. So long as the disease in the collapsed stage continued, the medicine was continued; for pending the duration of that stage, I desire emphatically to aver, no absorption of the Calomel takes place, and no ptyalism can occur; and when that stage was yielding to the remedy, I took the needful care to suspend the use of it. Of the patients whom I lost, the greater number died in the stage of collapse, and within from twelve to twenty-four hours from my first seeing them; and nearly all, if not all, from causes which were superadded to the disease, and which, in most instances, might have been obviated by a more exact attention of the friends and attendants to their duty. Few, therefore, died in the consecutive fever, and of those who recovered, not one in ten had any fever at all; for it is one of the essential and distinguishing properties of this treatment, to prevent the occurrence of the consecutive fever, by its direct power to restore the secretion of the liver, which is alone required to put an end to the disease. I have already stated, that notwithstanding the very large quantities of Calomel that are often needed, and taken in single grain doses, ere the collapse be subdued, no ptyalism or other inconvenient effect is ordinarily produced by it. Not one in twenty of my patients had any ptyalism at all; nor in the very few who had it, did it last much more than a week, and not in any of them was there a vestige of it at the end of a fortnight. Indeed, after taking some pains to call to my recollection the number of such patients, I can only count up seven who could be said to make any complaint of it, and with those whose lives had been saved by it, it passed away entirely in ten or twelve days, and without producing, or leaving behind it, even the shadow of a shade of those effects which some might imagine to be inevitable, and, in its anticipation, bewail with profitless lamentation. In the way already described, I gave it alike to infants, though in a smaller dose, and to the aged, and in one instance, to a considerable extent to a woman ninety-two years of age, whom I found in the collapse stage, and nearly pulseless, who in a few days was wholly recovered, and who survived the attack no less than eleven years, having reached the advanced age of one hundred and three, and with a power to take out-door exercise up to a period very near her death.

"In some cases, it was taken in quantities the most considerable, and which nothing but the imminency of the danger from the disease, and the experience of its harmlessness, could justify. By one man, Vaughan, a tramp, who was admitted into the hospital in the stage of collapse in its most malignant form, and who only emerged from it slowly at the end of three days, the immense quantity of five hundred and eighty grains of Calomel was taken, and who, notwithstanding, without either fever or ptyalism following, was perfectly well, and ready to leave us in a week."

Dr. Ayre has published during the present year the following additional communications on the same subject:

1. On the Error of Certain Published Opinions concerning the Nature of the Malignant Cholera; and on the Treatment of that Complaint in the Collapsed Stage by single-grain doses of Calomel. (*Lancet*, March 10th, 1849, p. 260.)

2. On the successful Treatment of Asiatic Cholera—by small and frequently repeated doses of Calomel. (*Lancet*, 11th August, 1849, p. 145.)

3. Treatment of Cholera, by small and repeated doses of Calomel. (*Lancet*, 22nd September, p. 327.)

Our space will only permit us to refer our readers to the communications themselves, and to make a few remarks on the extraordinary plan of treatment which they advocate.

Dr. Ayre says, "When gentlemen writing on the subject of Cholera inform us that they give large doses of Calomel in the stage of collapse, with a view to its being absorbed, and of acting on the disease through the circulation, and even object to the use of small and frequently repeated doses, they wholly overlook the important fact, that pending the duration of the stage of collapse no absorption takes place."

We perfectly agree with Dr. Ayre, that the Calomel is not absorbed during the stage of collapse; but we cannot imagine what advantage can be derived by administering it in the manner recommended by him. If, then, it be not absorbed, how does it act? The following extract from his paper in the *Lancet* of 11th August, shews his idea of the pathology of Cholera. "I have always held and acted upon the opinion, that the abeyance of the vital powers, as shown in the shrunken features and cold and livid surface, and also the cramps, and, indeed, every one of the appalling symptoms of the complaint, are dependent upon a venous congestion of the liver, produced by its interrupted secretion, and that it is by means that will restore that secretion, that the whole of its symptoms is to be removed." We confess ourselves utterly unable to divine how unabsorbed Calomel can restore the secretion of bile. Its mere mechanical presence in the stomach would surely give it no advantage over any other substance; and Dr. Ayre himself gives us no further explanation than is contained in the above extract. Our opinion of the cases in which Calomel has been used by Dr. Ayre and others with alleged success, is, that in some there has been a spontaneous cessation of the collapsed condition, and that, in many, recovery is to be attributed to the remedies employed in conjunction with it—such as opium, internal stimuli, and the application of warmth externally. As an example of this, we quote the following extract of a communication by Dr. George Burton Payne, of Warwick-square, (*Lancet*, Sept. 8th, 1849). This gentleman discountenances any attempt to establish a rational treatment, and says:

"I have myself much pleasure in bearing testimony to the success of the plan proposed by Dr. Ayre, of Hull, which I have steadily pursued (occasionally modified), and have lost but one patient (a boy) throughout the whole epidemic, although I have had under my care very many cases, in all stages of the complaint. But one remarkable recovery induces me to send you a brief account of the case, which, if you think worthy a place in your practical journal, is very much at your service.

"Mrs. B——. Aug. 23. Came over from Lambeth to Westminster, to see some friends, when she was suddenly seized with vertigo, inability to stand, followed by vomiting and purging, and severe abdominal pain. She immediately took a mixture composed of spirit of turpentine, and the tinctures of capsicum and opium (dispensed to some receipt), which had aggravated the symptoms, and I found her, about eight o'clock in the evening, vomiting incessantly the rice-water ejection, with violent cramps in the feet and legs, constant involuntary purging, etc. Ordered sinapisms over the whole abdomen, hot bottles to feet, etc., and to take chloride of mercury, two grains every five minutes, followed by tincture of opium, five minims; compound spirit of ammonia, six minims; water, one drachm.—At nine o'clock, sickness, purging, and pains, much relieved; a genial heat and gentle perspiration breaking out over the entire surface of the body. To continue chloride of mercury, one grain every half-hour, alone.—At three A.M., was called up and found the woman cold, livid, pulseless at the wrist, the legs completely flexed upon the body. Had so far improved, up to twelve o'clock, as to be able to set up in bed, and had then been persuaded to take a glass of brandy. The sickness and pains almost immediately returned, and continued with increasing violence until the time I was called up. Although believing the case to be hopeless,—so great was the prostration,—I gave her ether, one drachm; tincture of opium, ten minims (one dose); with chloride of mercury, two grains every five minutes, placed upon the tongue without anything else. This was done punctually for two hours; and at seven o'clock I

had the satisfaction of finding my patient sleeping, and in profuse perspiration : in a word, reaction was completely established. She took a grain and a half of calomel every two hours throughout the day, and with attention to diet alone, recovered, without any ill effects from the quantity of chloride of mercury taken."

In many other cases, we think that the recovery is to be attributed to nature ; that the cessation of the cramps, collapse, etc., and the restoration of the secretions, occurred in a manner perfectly *analogous to the cessation of the cold stage of an ague.* The non-occurrence of consecutive fever after the use of Calomel is not, we think, a consequence ; and its intensity after the use of stimulants is similar to what has been observed in fevers of a remittent and intermittent character, in which the too free administration of stimulants during the cold stage has been followed by an exacerbation of the symptoms of febrile reaction.

That Cholera is localized in the liver, as Dr. Ayre imagines, is entirely opposed to facts, and to the opinions of numerous careful observers, who have had extensive opportunities of studying the disease. The admirable papers of Dr. James Bird, published in this Journal, as well as the observations of Raikem, Lévy, and many others, all tend to show the *general* suspension of the secretions. In Dr. Graves' *System of Clinical Medicine* (1848), p. 417, we find the following pertinent remarks: "The principle on which the Calomel treatment was employed in Cholera, arose from almost constantly observing that there was a total deficiency of bile in the stools. Soon after the supervention of an attack, the alvine discharges were observed to be white, and without the slightest tinge of bile; and on this very remarkable symptom, practitioners dwelt almost exclusively, thinking that the patient's only chance lay in restoring the secretion of the liver. Now it is obvious that the absence of bile in the stools is no more a cause of the disease, than is the deficiency of urea in the kidneys, or of serum in the blood. Viewing the disease in this light, it would be just as reasonable to give a diuretic to restore the secretion of the kidney, as to give Calomel to produce a flow of bile.'

We have selected Dr. Ayre's observations as the basis of our observations on the use of Calomel in the collapsed stage of Cholera ; and we must refer our readers to the contemporary journals for the statements of others, who think they have employed his plan successfully. Many of them, however, like Dr. Payne, greatly modify the treatment by the addition of opium and stimulants. Dr. Ayre is evidently carried away by his hobby. He imagines he has done wonders with Calomel ; yet the enormous mortality from Cholera at Hull (which he attempts, in his letter of September 22, to explain by "the unsurpassed malignity of the disease"; by "the utter inadequacy of the medical gentlemen to give proportionate attention to the cases"; by "the trust which the patients place in the nostrums retailed by druggists ; and by the adoption, by many practitioners, of stimulants and opium, in opposition to the Calomel treatment"), as well as the non-success of his treatment, as tried in other places, tend to show that it must not be depended on. Dr. Hughes, of Guy's Hospital, in the *Lancet, Medical Gazette,* and *Medical Times* of September 22, very pertinently remarks, that if the correctness of the assertions made by Dr. Ayre, be admitted, "there must be a mistake somewhere: either the disease is much more virulent, and therefore less controlable, in London, than it is in Hull and other places, in which the small(?) doses of Calomel are found to be so wonderfully efficacious; or there must be some other source of fallacy to be discovered."

While we consider that no reliance can be placed on Calomel in the collapse, we are far from decrying its judicious use in other stages of Cholera. Dr. Bird recommends it in the premonitory stage, in combination with quinine and astringents (see p. 842); and Dr. Alexander, in his Remarks on the Cholera, as it exists in Holland (*Lancet,* July 21, p. 69), says: "In the stage of reaction, calomel in grain doses, with or without laudanum,

according to the state of the bowels, or the abdominal pain, is then most relied on, and given, with the best effects, with cold wet cloths to the forehead." We believe it to be *one* of the several remedies which may be advantageously employed in this stage, to assist in the restoration of the secretions when the organs are regaining their functional energy; but when the functions are suspended, as in the collapsed stage, we hold it to be useless. We must also remember that when reaction sets in, the stools may become bilious without the aid of mercurials.

We cannot better end these remarks than by inserting the following communication, made by D. W. Lindesay Richardson, of Edinburgh, to the *Medical Times* of 22nd September :—"Entering lately on an extensive charge of Cholera-patients, under Dr. William Robertson, of this city, and impressed by the reported beneficial results of Dr. Ayre's treatment of the disease, I deemed it a duty, alike to those entrusting their lives to my care, as to the advocates of this plan, to put it at once in operation. It has been my endeavour to fulfil, to the letter, the plan proposed, and to carry such out I have used every possible exertion. Calomel was given in two-grain doses every ten minutes, accompanied by half, one, or two drops of the tincture of opium. I sat for nights at the bed-side noting every change, and, when I did not administer it myself, I have every reason to place confidence in those to whom I entrusted it. The results, as seen by the accompanying table, are far from satisfactory.

"We have these eighteen cases of pestilential Asiatic, or malignant Cholera; selected, I confess, not, however, on account of the hopeless or moribund condition of such, but with a view to exclude any of a dubious nature. All must be aware, that during the prevalence of an epidemic like the present, many solicit admission into hospitals labouring under presumptive Cholera; some may be cases of cholerine, but such I hold to be as distinct from pestilential Cholera as ephemeral fever is from typhus, and as little entitled to a place, when the treatment is under consideration. The treatment in question, then, was adopted in the first eighteen unequivocal cases which presented themselves.

No.	Age.	Sex.	Passed into stage of reaction.	Made Water.	Mouth affected	Lived after admission into Hospital.	Amount of Calomel administered.	Cured.	Died
1	28	F.	—	—	—	24 hours.	100 grs.	—	1
2[1]	24	M.	1	1	1	7 days.	300 „	—	1
3	28	F.	—	—	—	16 hours.	120 „	—	1
4	14	M.	—	—	—	15 „	120 „	—	1
5	24	F.	—	—	—	7 „	60 „	—	1
6	28	F.	1	1	1	—	228 „	1	—
7[2]	27	F.	1	1	1	9 days.	388 „	—	1
8	40	F.	—	—	—	24 hours.	150 „	—	1
9	10	M.	1	—	1	3 days.	196 „	—	1
10	39	M.	—	—	—	2 „	220 „	—	1
11	40	F.	1	—	1	4 „	188 „	—	1
12	40	F.	—	—	—	16 hours.	168 „	—	1
13	47	M.	1	—	—	3 days.	164 „	—	1
14	39	F.	—	—	—	9 hours.	70 „	—	1
15	11	M.	—	—	—	15 „	140 „	—	1
16	39	F.	—	—	—	15 „	155 „	—	1
17	40	M.	1	—	1	4 days.	142 „	—	1
18	38	M.	—	—	—	10 hours.	80 „	—	1

[1] This patient survived the Cholera, but died of pneumonia.

[2] This patient survived the Cholera, but died of peritonitis, probably connected with recent delivery.

"1. I have arranged the cases according to their state on admission. No. 16 will be seen to be one in which the disease was but commencing, and in which, from my experience of other plans of treatment in such cases, might, I have little doubt, have been cut short. 2. Three, in which the affection of the mouth announced the systemic action of the medicine, died. 3. Two who survived Cholera died, one of pneumonia, the other of peritonitis (the former, undoubtedly), developed while the system was under the influence of the medicine. 4. Four, who passed through the stage of re-action, died without having voided urine. 5. In eleven there was not the slightest attempt at re-action. 6. Taking, then, the eighteen, one only was in life at the expiration of this plan of treatment.

"After such a result it can hardly be wondered that I cease to hope from the two-grain doses of Calomel."

AFFECTIONS OF THE MAXILLARY BONES AMONG LUCIFER-MATCH MAKERS.

THE VIEWS OF DR. HELFT.

Dr. Helft, of Berlin, considers, from his investigations of these affections, that they are not attributable, as supposed by some pathologists, to a peculiar and special disposition in these bones to the morbid influences of the vapour of phosphorus. He is of opinion that they originate in periostitis, a view which, in his judgment, receives support from the observation of similar effects as the consequence of the same morbid conditions of the gums produced by other irritating substances. This form of periostitis, whether it be traumatic or rheumatic, or whether it arise from any other cause, at length implicates the substance of the bone, obstructing or destroying its vessels by exudation or suppuration; and thence follows necrosis with those pathological conditions which have been so fully described by Dr. Giest, of Erlangen, although this author has not assigned them to periostitis as the immediate cause.

Dr. Helft points out that those only among the workers in phosphorus who are of a scrofulous or cachectic habit, and in whom a morbid state of the gums, or alveoli, exists, are exposed to this particular form of disease, as these conditions necessarily render the periosteum more susceptible of the action of phosphorous vapours.

Dr. Helft concludes that rheumatism alone will not produce it, but that the same effects would occur in any other morbid condition of the gums, &c., if exposed to the irritant action of phosphorous vapour. An analogous effect is produced by other irritating substances, as is shewn in the almost endemic prevalence of periostitis of the alveoli in eastern countries, which partly arises from the use of tobacco, and partly from want of cleanliness, combined with poorness of diet.

The experiments of Bibra on animals show that phosphorous vapour is capable of causing bronchitis, pneumonia, gastritis, periostitis, exostosis, and necrosis. Professor Rigler, of Constantinople, attributes the endemic prevalence of the disease of the mouth to the employment of strong soap, to cleanse the mouth and gums, by the Turks, and of late by other Orientals. Dr. Rigler also informs us that the same disease prevailed extensively among some Albanians, who were taken from their mountain homes, and subjected to military discipline, with an entire change of diet. That the disease had arisen from these causes was rendered evident, by its complete arrest on a return to their usual diet, by the prohibition of tobacco, the frequent cleansing of the mouth with a very dilute solution of mineral acid, cauterising the gums with lapis infernalis, and the adoption of other remedial measures.

From the preceding facts, it is obvious that a diseased condition of the jaw-bone may arise from other causes than the irritant action of phosphorous vapour; and, whatever may be the ultimate decision with regard to Dr.

Helft's theory, it is undoubtedly of value, as pointing to the due hygienic measures for the prevention, and to the curative means to be adopted for the arrest, of the disease.—*Casper's Wochenschrift*, Aug. 19, 1848, and *Med. Gazette*, May 11, 1849.

MATERIA MEDICA AND PHARMACY.

HELONIAS DIŒCA (UNICORN PLANT).

In the *Boston Medical and Surgical Journal*, Dr. Braman states that, for nine years, he has been in the habit of using preparations of this plant as a remedial agent. He considers it peculiarly applicable in such affections as have their origin in atony of the generative organs of both sexes,—but particularly the female. "In leucorrhœa", he says, "I consider it invaluable. I use it with a confidence I *attach to no other medicine*. Under its influence the patient, whose life has been almost a burden, soon revives. Her uncomfortable sensations vanish, and, ultimately, an entire recovery of health and strength is established." It may be given in the form of powder, tincture, or syrup; but the latter is the most eligible. The *doses* which Dr. Braman recommends, are, of the *powder*, one drachm and a half; of the *tincture*, one fluid drachm; of the *syrup*, three fluid drachms. These doses are to be taken thrice a day, half an hour before the ordinary meals; and, according to the urgency of the case, the quantity administered may be increased, if the patient bear it well. In irritable stomachs, nausea is sometimes produced; and when this occurs, the dose must be diminished.

The dose of the powder may serve somewhat as a guide to the preparation of the syrup and tincture; but the formulæ ought to have been given by the author. In place of this, the reader is referred to 481 Washington-street, Boston, for the articles themselves. This has a suspicious appearance, and inclines us to fear that the main object of the doctor has been, to send customers to the druggist, and not to enlighten his brethren.

A HINDOO REMEDY FOR CONJUNCTIVITIS.

Take a flat, rusty piece of iron, and a lump of alum about the size of a nutmeg. The alum is to be melted on the iron over a lamp, then add the juice of half a small lemon, or a little juice; rub together and apply to the lids while warm, morning and evening, for three or four days.

This composition is apparently the citrate of iron and alumina.

CANTHARIDAL COLLODION.

Mr. Hisch, a pharmaceutist, of St. Petersburgh, recommends the following as a vesicatory, when it is necessary to place one upon a situation where it is liable to be easily displaced by the movements of the patient. We have, generally, in such cases, been in the habit of ordering the cantharides plaster of the Pharmacopœia to be spread on the common adhesive plaster: but Mr. Hisch's plan seems a better one.

The Cantharidal Collodion is thus prepared:—Exhaust, by the displacement process, one pound of coarsely powdered cantharides by one pound of sulphuric ether and three ounces of acetic ether: in this way is obtained a saturated solution of cantharides, along with the green animal fatty matter. Dissolve twenty-five grains of cotton-powder in two ounces of this liquid, and preserve it for use, in well stoppered bottles. When a blister is required, it will be sufficient to smear with this fluid the surface to be vesicated.

REPORTS OF SOCIETIES AND ACADEMIES.

WESTMINSTER MEDICAL SOCIETY.

Session 1848-9. October 21, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

President's inaugural address. In the course of his remarks, Dr. Webster made the following observations with reference to the health of the metropolis. "With regard to Cholera, it is interesting to know that, notwithstanding the anxiety now prevalent, it hitherto has not made much progress in the metropolis; and that if its present fatality be compared with other epidemic maladies, we have as yet really not much cause for alarm; for during the six weeks, ending on Saturday, the 16th of October, 1847, the number of fatal Cholera cases, in London was twenty-six; whilst the total number of deaths caused by the same malady, throughout the entire metropolitan population, during the six weeks ending on Saturday last, the 14th instant, amounted to sixty-seven, being, as yet, only a little more than double the mortality by Cholera during the same number of weeks in the previous year. Compared with this, it is instructive to mark the different results observed in another epidemic now prevailing in London with great severity, but which does not cause anxiety to the extent it deserves—I mean Scarlatina. Hundreds of victims have been recently sent to an untimely grave by this pestilence. In the Registrar-general's tables it is stated, that during the six weeks terminating on Saturday, the 16th of October, 1847, 302 individuals died in London from Scarlatina; whereas, during the six weeks ending on Saturday last, the 14th instant, as many as 972 persons have sunk under that virulent complaint; or upwards of quadruple the average mortality by the same disease in the previous five autumns. Although Scarlatina is a disease of frequent occurrence in this country, and although it annually carries off thousands of individuals, hitherto, very few sanitary measures have been put in force by public bodies for preventing its approach, notwithstanding its highly infectious nature. But this is only another illustration of the prevailing disposition, in the minds of many persons, to view whatever is familiar with indifference, whilst anything new or uncommon is sure to attract attention.

Epidemic influenza was fatally prevalent in the metropolis at the early part of last winter, 1213 persons having died of it during the six weeks ending on Saturday, the 8th of January last. At the same time, the total deaths registered, from all causes, were increased to an extraordinary extent, being so high as 2454 in one week, and 2416 in the subsequent—instead of 1046, the ordinary weekly average. Contrasted with this plague-like mortality, it must be gratifying to hear that London, comparatively speaking, is not at present unusually unhealthy, notwithstanding the actual presence of Cholera, the great malignity of Scarlatina, and the prevalence of Typhus, by which disease 424 persons have died in the metropolis during the last six weeks, instead of 260, the averaged deaths by Typhus of a similar period, during the five preceding autumns. Such facts are important; and although the Cholera now occasions considerable anxiety, the total deaths from all causes, throughout the metropolitan population, have actually diminished, especially during the last fortnight, notwithstanding the prevailing epidemics. This is proved by the mortality tables, which show that instead of the weekly average of 1154 deaths, as in the last five seasons, during the week ending on Saturday, the 7th October instant, 1005 persons died from all causes in the metropolis, and only 991 in the week terminating last Saturday, the 14th: thus making a diminution of not less than 312 deaths in the two weeks now referred to,

being an excess of fifteen and a half per cent. last year, over the two corresponding weeks of the present season."

Apparatus for relieving the Breast, when over-distended with milk, was exhibited by Mr. Hancock. It consisted of a very stout bottle, surrounded by a ring, with an ivory shield, which firmly fitted the nozzle. The bottle having been filled with boiling water, to heat it, is emptied, the ivory shield replaced, and the mouth-piece placed against, but not pressed upon, the nipple,—which would be immediately drawn out, as well as some of the superabundant milk.

Pathology and Treatment of Cholera. By Francis Hird, Esq. Mr. Hird dwelt upon the differential diagnosis between the malignant or Asiatic Cholera, and the ordinary autumnal affection observed in this country. The symptoms by which the malignant form may be recognized, he stated to be,—the absence of bile, both in the matters vomited, and discharged from the bowels—the suppression of urine—the cold breath – the veiled unearthly voice—the rapid sinking of the heart's action—and the great fatality of the disease. In speaking of the mode of invasion, the author stated that, as a rule, the disease is preceded by an attack of diarrhœa, which may continue for an hour or two, or may be protracted to one, two, or three days, before the symptoms characteristic of the pestilential malady develop themselves. This diarrhœa should never be overlooked, and the absence of pain was no proof that it would not terminate in Cholera. He divided the disease into *three stages*,—the first, diarrhœal or premonitory ; the second, or algide stage, marked by great depression, and by the peculiar dejections, of a watery character, loaded with flakes of whitish matter, which under the microscope appear to be composed of cells, rather larger in size than exudation corpuscles, of scaly epithelium, of a few blood corpuscles, and of other matters, differing in each individual case, according to the severity of the symptoms ; and the third stage, indicative of reaction.

The author stated that, although the disease did not usually spread from person to person so rapidly as scarlatina, small-pox, or measles, it was very analogous, in reference to its mode of communication, to typhus fever and erysipelas. A patient labouring under typhus, when conveyed into a good-sized and well-ventilated apartment, would rarely communicate the disease to the attendants ; whereas, the same patient, placed in an unfavourable locality, and surrounded by poverty and distress, would very probably spread the disease to those in attendance. *Cholera he believed to be contagious*, and that it had been traced to spread in accordance with the ordinary laws of contagion. The frequent immunity from the disease of the professional and other attendants, was no proof of the non-contagious nature of the disease; for the same objection might be adduced, against the contagiousness of any of the acknowledged infectious diseases. The leading symptoms of the disease, the mode of its fatal termination, and more especially the spontaneous favourable termination occasionally observed, under every variety of treatment, all tend, in the author's opinion, to assimilate it to the effects of poisons on the animal economy. However great the obscurity may be which overhangs the question, respecting the generation or exciting cause of Cholera, most satisfactory evidence can be adduced to prove, that many circumstances predispose to its influence. Persons who exceed in spirits, wines, fruits, or unwholesome food—the debilitated from any cause—the poor, who live in badly drained, and ill-ventilated residences—and especially those who have suffered from previous diarrhœa, rarely escape when the pestilence prevails.

The post-mortem appearances, which the author had observed in several fatal cases of the disease, were detailed. In those who died during the algide stage, the body had undergone great diminution in bulk, and become almost as emaciated as a body in the last stage of consumption ; the peculiar blue colour of the skin frequently disappeared shortly after death ; the tempera-

ture of the surface of one or two bodies increased for a short time after death. Quiverings of the muscles, and sometimes even distinct movements of the limbs, took place for an hour or two after all signs of animation had departed. The shrivelled appearance of the hands resembled those of washerwomen. In the chest, in most of the cases, slight effusions of blood were found on the heart, and on the pneumogastric and sympathetic nerves. Dark viscid blood filled the right side of the heart; in one or two instances coagula were found. The left cardiac cavities were generally nearly empty, containing only a small quantity of thick, black blood. The aorta and its large branches were also nearly empty. The lungs and pulmonary arteries were gorged with very dark, treacly-looking blood, and spots of ecchymosis were observed, in two or three of the bodies examined, between the pleura and parenchyma of the lungs. In the abdomen there was very great venous congestion. In the cava, iliac, and portal veins, the blood was black and tenacious. The liver was congested, and the gall-bladder distended with green or dark yellow bile, of a ropy character. The mucous glands of the intestines stood out in bold relief; the agminated and solitary, as well as those of Brünner, being enlarged; and the epithelium, in many of the most severe cases, was completely stripped off the mucous membrane. The kidneys, and the whole genito-urinary mucous membrane, were greatly congested, and the bladder much diminished in size. On examining the brain, medulla spinalis, and their envelopes, in the cases which terminated fatally during the algide stage, with the exception of venous congestion, there was found no particular morbid appearances; whereas, when death had occurred subsequent to reaction, great vascular turgescence was observed, and in two cases in which coma had existed for some time, serum was found in the ventricles. From the appearances observed after death, from the mode of development of the disease, and from the peculiar character of the symptoms in its successive stages, the author concluded that the organic nervous centres are, if not primarily, at least consentaneously, affected with the blood, and that all remedies should be prescribed with reference to this view of the pathology of the disease. He considered it unphilosophical and irrational to apply our remedial agents, with a view to check one or other of the isolated symptoms which manifest themselves in the progress of the disease.

Treatment. In order to attain even moderate success in the treatment, the author considered that a comprehensive view should be taken of the disease, and that special attention should not be directed to any one particular symptom which may show itself during life, or to one particular lesion which may be discovered after death. The disease should not be located in any particular organ; but the leading symptoms during life, and the prominent morbid lesions most frequently observed after death, should be carefully noted, and the effects of medicines, in modifying the severity of the symptoms, watched most attentively.

Cholera being essentially a disease of collapse, three grand objects are to be attained, viz.: the rousing of the vital energies, so as to enable the patients to resist the depressing influence of the morbific poison; the arrest of the frequent evacuations from the bowels; and the restoration to a healthy condition of the secretions and excretions. In the *premonitory diarrhœa*, the author had found of service scruple doses of the compound chalk-powder with opium, combined with spirits of ammonia and cinnamon, in the infusion of cusparia. This medicine, with small quantities of brandy at intervals, would frequently prevent the further development of the disease. When the evacuations were watery and contained little bile, he gave five grains of calomel and half a grain of opium immediately, and followed this up with a grain of calomel, and two grains of cayenne, every ten minutes, quarter, or half hour, in proportion to the severity of the symptoms. He considered that the secretions were more effectually restored by these measures, than by the scruple doses of calomel and two or three grains of opium, which some

practitioners had recommended, and that the rapid depression which frequently followed the use of the latter, was rarely observed under the former treatment. When the symptoms increased in violence, and were not checked after three or four doses of the above, and the characteristic evacuations and other symptoms, which denote the approach of the algide state of the disease, had set in, he found the greatest amount of benefit from the use of emetics of mustard and salt, the application of mustard cataplasms over the region of the heart, and along the course of the pneumo-gastric nerves in the neck; frictions to the extremities, chest, and abdomen; the free use of diluents; turpentine epithems to the abdomen; and a liberal supply of warm clothing and heated air. After two or three full vomitings had roused the heart's action, and in a measure overcome the disposition to internal congestion, the author recommended acetate of lead, in doses of two grains, every half hour. His experience bore out the favourable opinion formed of this remedy by Dr. Graves, of Dublin, who introduced it to the notice of the profession in 1832. In the intervals between each dose, ammonia in five or ten grain doses ought to be given; or from five to ten drops of chloroform on sugar. The vapour of chloroform had been recommended by some physicians to allay the violence of the spasms. The author stated that he had not had an opportunity of trying its effects, but did not expect from its *modus operandi* on the healthy body, that it could do more than simply allay the pain in Cholera, and might have injurious effects on the action of the heart and nervous system, if given in a dose sufficient to produce anæsthesia.

By the above measures, the functions of the heart and lungs were maintained—internal congestion, as far as possible, prevented—and time thus afforded for the system to overcome the effects of the morbific poison. The acetate of lead, he found, had more power in checking the constant drain from the system of the elements of the blood, than any other remedy that had been suggested. The treatment by immense quantities of calomel, with the view of forcing the action of the liver, he believed was founded on an erroneous view of the disease. The want of action in the liver was not the cause, but the consequence, of the disease, and the deficiency of bile not more important than the deficiency of urine. Both secretions are restored so soon as the virulence of the disease is overcome; affording certain evidence of returning nervous force and healthy action. During *reaction*, the treatment applicable to fever was called for. The abstraction of blood, generally, was almost equivalent to the abstraction of life, and ought never to be resorted to except in young patients, who, previous to the attack, had been in robust health, and when the blood had not been deprived, by frequent and long-continued evacuations, of a large quantity of its serous and saline constituents. Its beneficial influence, even in the class of cases mentioned, was very questionable, and was purely of a mechanical character. The subsequent management of the disease required quinine, and similar treatment to fevers from miasmata. *Large doses* of opium, brandy, and other powerful stimulants, the author objected to. When given too freely, they interfere with the restoration of the functions of the several depurating organs,—they increase the liability to consecutive fever:—and coma is much more frequent when they have been largely administered.

November 4, 1848.

John Webster, M.D.,F.R.S., President, in the Chair.

The Case of a Man who shot himself in the Mouth with a Pistol, was narrated by Mr. Wade. The lower jaw was fractured near its centre, and the lips and cheeks cut into riband-like strips; the edges of the wound were black and jagged, the two principal lacerations extending from the angles of the mouth to the mastoid processes: the mucous membrane of the whole interior of the mouth and fauces was black and pulpy, and blood freely oozed out, but no open blood-vessels could be detected. It was discovered

that the pistol had only been loaded with powder. The fractured ends of the jaw were secured *in situ* by strong ligatures passed round the teeth, and the wounds of the cheeks and lips were united by stitches; a light bandage was applied, and ice employed, and subsequently a piece was placed in the mouth, which checked the hæmorrhage. The next day the patient had considerably improved, and was received at the Westminster Hospital, where, while taking some beef-tea, he fell backwards and expired. Mr. Wade supposed that spasm of the glottis was the cause of his death.

On Scarlatina. By Mr. I. B. Brown. The author pointed out the treatment he pursues:—His first care is to freely apply a stick of lunar caustic[1] to the tonsils and fauces, even though ulceration be absent, in order altogether to check the formation of ulcers; or if they be already formed, to accelerate their healing. At the same time, he applies to the throat, externally, some stimulating application, or poultices. The medicine first given is a dose of calomel, followed shortly by a dose of castor oil. The bowels having been acted upon, a course of treatment is commenced, which may be described as of a stimulant character, and such as is indicated by the view of the pathology of the disease entertained. The patient is strictly kept in bed, and sponged with tepid vinegar and water, the hangings about the bed and room removed to facilitate ventilation, and the floor sprinkled with solution of chloride of lime, or with Burnett's Solution. But the distinctive part of the author's treatment consists in the administration of dilute acetic acid, in doses of half a drachm and upwards, according to age, given in syrup or other convenient vehicle. This medicine is followed by the exhibition of stimulants, as wine or brandy, given with arrow-root, gruel, or with any diluent, together with beef-tea, or veal, or chicken-broth. These stimulant and supporting hygienic measures are, as a rule, commenced on the second day of treatment. The state of the throat is diligently attended to; the tonsils and fauces being sponged two or three times a day with a strong solution of nitrate of silver (ten grains of the salt to one ounce of water). This application induces a healthy action in the parts, and brings away the viscid mucus which impedes respiration and deglutition. Not unfrequently, the caustic solution is advantageously projected by a syringe, through the nostrils, to the upper and back part of the pharynx, to remove the acrid, and often sanious, discharge. Recourse to opiates or sedatives is generally necessary to produce sleep, or allay irritation. Tonics may be usefully combined with the acetic acid mixture; and the exhibition of ammonia is indicated where great depression exists.

Although unable to state the *modus operandi* of acetic acid, Mr. Brown believes it to be a direct stimulant to the skin and kidneys, tending to remove the existing congestion of their vessels. As soon as these excretory organs can be made to act, he considers the danger of scarlatina is passed—*i.e.*, should no extraneous accidental circumstance interfere.

When death takes place, it appears to the author to depend either upon the influence of the poison on the brain and nervous system generally, as seen where coma and delirium supervene in the course of the first three days; or on a mechanical impediment to respiration, from the condition of the fauces, together with the consequent circulation of imperfectly aërated blood, and, probably, the constant re-imbibition of the poison into the circulation, by the necessary passage of the inspired air over the diseased mucous membrane.

Coma, or delirium, when present, instead of indicating the employment of venesection, the author believes should be treated by the administration of stimulants and sedatives; and he lays much stress upon the necessity of

[1] With struggling children, is not a strong solution, applied by means of a camel's hair pencil or little mop, much safer? Editor.

maintaining an uniform temperature during the whole course of the disease; as any check to the efflorescence may give a fatal turn to the malady, or any exposure to cold, in an after stage, may be followed by *dropsy*. Of the last-named sequela, not one case, in 253 seen by him, occurred.[1] Desquamation was found to be favoured by the use of the warm bath; and until that process is completed, the danger of Scarlatina cannot be deemed as past.

In a concluding observation, Mr. Brown remarked that the specific stimulant influence of the acetic acid over the skin, might be referred, perhaps, to the chemical composition of acetic acid, an hydrated oxide of a radicle, acetule, which in its chemical relations approaches nearly to ethule, the hypothetical radicle of ether.

November 11, 1848. Francis Hird, Esq., V.P., in the Chair.

Disease of Kidney: Obstructed Emulgent Artery: Albuminous Urine: and Convulsions. By Dr. Woodfall. A female, aged thirty-eight, who had been subject, for many years, to disorder of the digestive organs, in March 1848 suffered very severely from headache and sickness, but her health improved greatly during a subsequent residence in the country. Early in September, soon after her return to London, she was seized with a violent attack of epistaxis, which was with difficulty controlled, and from which she never fairly rallied. Dr. Woodfall saw her first on October 3rd, and found her very pale, greatly emaciated, and suffering from obstinate vomiting and extreme tenderness in the left hypochondriac region. The urine was pale, clear, and acid; it deposited an abundance of albumen, on the application of heat; and was of specific gravity 1008. The vomiting and tenderness were soon relieved, but a convulsive attack took place shortly afterwards; the sensorium became affected, the countenance assumed a peculiarly wild and anxious look, though, on the attention being roused, she was able to understand and answer questions. About ten days before death, the conjunctivæ of both eyes became injected with blood; there was a return of epistaxis, pale coloured blood continuing to ooze from the nose for some hours; and there was hæmatemesis. The convulsions recurred at frequent intervals, and after lingering for a long period, death, preceded by coma, took place on October 29th. The urine was usually not deficient in quantity, though, on two or three occasions, none was voided for nearly twenty hours; it became neutral, or even alkaline, but continued to deposit albumen, on the addition of nitric acid; and the last time he examined the specific gravity, about a fortnight before death, it had fallen to 1005. On *examination after death*, the kidneys were found to be smaller than natural, pale and flabby; the left (the one exhibited), was smaller than the right. The emulgent artery, where it entered this kidney, was of cartilaginous hardness, and the vein was partially blocked up by a firm mass of fibrine. The divided arteries of the mesentery were rigid and gaping. The liver appeared natural in structure. The gall-bladder was of a deep purple hue, and firm and flesh-like to the touch; on slitting it open, it was found to be filled with a firm coagulum of blood, partially adherent, the source of which was extensive ulceration of the mucous membrane of the fundus and body of the organ. The other viscera of the abdomen presented no unnatural appearance, and, unfortunately, time did not permit him to examine those of the chest and brain. On reviewing the case, there could, he thought, be no doubt that the disease of the kidneys was of long standing. Whether it was occasioned by the condition which appeared to prevail in the arterial system, or whether both were the common result of faulty nutrition, it is not easy to decide; but he considered the latter the more probable explanation. The hæmorrhagic tendency which prevailed during the last two months of the patient's life was very remarkable.[2]

[1] Most extraordinary. Editor.

[2] This case affords a good illustration of toxæmic convulsions dependent on renal con-

Dropsy, dependent upon Cardiac Disease: Discharge from the Leg. By Mr. Nunn. The integument of the parts was studded with tubercles of about the size of moderately large split-peas, while the whole of the leg was very much distended with serum. The tubercles excreted, from their surfaces, a fluid in great abundance, and it was observed that, when the discharge of this fluid was copious, the chest symptoms remained in abeyance. The patient (a female) had been subjected to a great variety of treatment, by various medical men; and by some the disease was considered a species of Elephantiasis.

Mr. Nunn put forward the opinion, that the tubercles were the papillæ of the skin, hypertrophied and transformed into an excerning apparatus, the office of which was to rid the limb of effused fluid. A cast of the lower part of the leg was exhibited.

Dr. Ogier Ward related a case of Sudden Death, presenting some unusual post-mortem appearances.

Mrs. H., aged fifty-three, stout, but not florid, and liable to convulsive fits, had an attack resembling Angina Pectoris, while walking home. She had had an attack in church three weeks previously. Being taken to a medical man, her face was noticed to be pale, the eyes staring, the neck distended, but the veins not prominent; she complained of pain passing from her heart to her back, and gasped for breath; clear froth flowed from her mouth; she stretched herself out and died, the mouth being drawn to one side.

The medical man attempted to bleed her, but from both arms could only get a few tea-spoonfuls of thick black blood. On being laid out, her stays were found so tight that the lace could hardly be cut; but immediately this was done, the distortion of the face ceased, the left arm burst out bleeding, the blood was red and florid, and when, after great difficulty, the flow was stopped, the right arm began to bleed; previously to this a slight flush had been noticed on the cheeks, and the layer-out fancied that the woman's hand closed upon her's; the countenance also became quite placid, so that some doubts were held as to the real occurrence of death. The body was, however, placed in a coffin, where the same appearances continued undiminished, and an inquest was held upon it the second day after death, florid red blood continuing to flow during both days. After the inquest the coffin lid was laid on, which caused the cheeks to become more coloured, and a perspiration to appear upon the cheeks and forehead. The right arm was now stiff and cold, but the body had previously remained warm, and the nose and lips never became stiff; frothy mucus continued to flow from her mouth, and blood to trickle from her arms. The coffin-lid was secured, and the body buried, three days after the inquest.

While she lay in the surgery, the medical man listened to the heart's action, but heard no pulsations, nor were any felt by her friends subsequently.

November 18, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

Simultaneous Progress of Gout and Phthisis. By Dr. A. B. Garrod. The author was induced to bring this subject before the Society, as in a paper on phthisis, communicated last session, it was asserted that a gouty condition was inimical to the development of tubercular disease; and it was suggested that, for the purpose of preventing or curing the latter affection, an attempt should be made to produce a gouty diathesis; and even the internal administration of urate of soda was hinted at. Dr. Garrod spoke of his recent researches on gout, published in the *Transactions* of the Royal Med. and

gestion. Their character was in this patient indicated by albuminous urine during life, and established by the obstruction of the emulgent artery found on dissection. Dr. Cormack's papers, pp. 451 and 522, may be consulted. Had this patient been pregnant, the case would have (though wrongly) swelled the list of those who have perished from "Puerperal Convulsions." Editor.

Chirurg. Society, vol. xxxi, and described what he considered to constitute a gouty condition of blood—viz., the presence of an excess of uric acid, before and during the paroxysm, in acute gout; and as an almost constant accompaniment in those forms of the disease where tophaceous, or chalk-like deposits take place. If the gouty and tubercular diathesis were antagonistic, phthisis would never become developed in the inveterate forms of gout above alluded to. To prove the fallacy of the idea, the following Case was related:—A man, a painter, aged twenty-eight, a native of London (whose father and grandmother had suffered from gout), was admitted at University College Hospital, under Dr. Williams. He was of very intemperate habits; but until the last few years had had a sufficiency of food and clothing. From seventeen, he had suffered from what he termed "rheumatism," (gout?) but had no affection of the heart with it. He was of full habit, till about three years since, when he began to lose flesh and colour; without feeling particularly ill, and without having a cough. He was soon after seized with gout in both his feet and hands; tophaceous deposits formed; and he was confined to his bed for twenty-eight weeks. About two months after recovery, he was again attacked; and then had a severe cough, with greenish expectoration. The pectoral symptoms continued for about four months; the gouty, for two months longer. From this date, until admission into hospital, he was constantly suffering from chest affection and gout; hæmoptysis had occurred once; and deposits of urate of soda frequently came away from his joints. When admitted, he was pallid and emaciated; complained of pain in various joints arising from gouty inflammation; also of pain in his side, cough, and muco-purulent expectoration. Clear evidence was found of tubercular deposits in both lungs: at the apex of the left, a distinct cavity was indicated by pectoriloquy and cavernous respiration; during the remaining month of his life, the gouty affection continued to progress—now appearing in one part, now in another, and occasionally with the discharge of urate of soda from some of the joints. The thoracic affection also continued to advance, accompanied with hectic symptoms, increase of cough, and sharp pain in different parts of the chest, until he fell into a state of stupor, and so continued for a day or two, when death took place. *The post-mortem appearances* fully proved the accuracy of the diagnosis. At the apex of the right lung a cavity was found, large enough to contain a walnut; the rest of the lung was studded with scattered tubercles in different stages of development. The apex of the left lung was excavated to the depth of four or five inches, and the remaining portion was sprinkled throughout with grey tubercles. The heart was healthy. The liver had patches of soft tuberculous deposit on its surface. The kidneys were small, and many of the tubuli filled with a white matter, consisting of crystallized urate of soda, and uric acid. The spleen was enlarged. The mucous membrane of the colon was ulcerated in patches. The blood was found to contain a very large amount of uric acid, larger than Dr. Garrod had ever before obtained.

The rarity of the combination of Gout and Phthisis, was easily accounted for by the fact, that gout in general does not appear till after the age of forty, whereas tubercular disease is much more frequent before that period. It was very doubtful, whether a gouty condition of blood could be induced by the internal administration of urate of soda: so that granting that the antagonism of the two Diseases were proved, this treatment would be quite theoretical.

November 25, 1848.

Francis Hird, Esq., V.P., in the Chair.

Cancerous Deposit in the Clitoris, and in various tissues of the same Patient.[1] By Mr. Canton. The patient was upwards of sixty. The labia minora and inguinal glands were implicated. The bones, generally

[1] The preparations were exhibited.

were brittle, and some of the ribs especially so, where masses of scirrhus, embedded in the lungs near their surface, had become adherent to them. The lungs were emphysematous ; a little turbid fluid was found in the pleural sacs. The liver, kidneys, and left crus of the diaphragm were also affected.

Remarks on the Statistics, Pathology, and Treatment of Puerperal Insanity. By John Webster, M.D., F.R.S. In 1091 curable female patients recently attacked by insanity, and admitted into Bethlem Hospital, during the last six years, 131, or one-eighth of the whole, were puerperal cases ; thus showing that the malady is not unfrequent. More recoveries were reported in this, than in the other varieties of lunacy ; 81 puerperal patients having been cured, or at the rate of 61.83 per cent. ; whereas the average recoveries during the last twenty years, in all cases of insane females treated at this institution, was 53.67 per hundred. Hence, three in every five cases of Puerperal Insanity may be confidently expected to get well within a year. In regard to hereditary tendency to mental disease, 51 of the 131 patients were thus predisposed, or 39 per cent. ; whilst 41 were suicidal, being at the rate of 31 in every 100. Both these peculiarities are of much importance in this malady, and materially influence the disease, its progress, and result. Respecting the total deaths in the 131 puerperal patients, the author reported that they amounted to 6, or 4½ per cent. ; thus making the average rate of mortality nearly the same as in other species of insanity, taken collectively.

Three of the six patients who died were suicidal and hereditary ; one was only hereditarily predisposed to insanity, but not suicidal; whilst two, it was reported, had neither of these peculiarities ; and none were insane previously. In addition to these facts, the author also mentioned, that half the deaths occurred in persons who were not affected longer than fifteen days, the shortest period being eleven days ; and that all were attacked by insanity within seventeen days after their confinement. In none of the dissections were any morbid changes observed in the abdomen, but the lungs always appeared to be diseased, as also the brain and its membranes. The details of an autopsy were then described, as illustrative of the diseased changes of structure frequently met with in puerperal mania ; the principal morbid alterations being, turgidity of the blood-vessels of the brain and membranes ; large bloody points on cutting the cerebral substance ; slight serous infiltration of the pia mater, and considerable effusion of fluid into the fifth ventricle : adhesion and purulent ulceration were noticed in the left lung, with hepatization in other portions of that organ, and, in the right lung, partial pneumonia in the congestive stage.

Puerperal Insanity, in the author's own opinion, is both more frequent and fatal in the upper than the lower class of society ; the suicidal and hereditary cases being less tractable, than the other forms of the malady. The melancholic cases proved more protracted, and less curable, than the other varieties ; and that, although over-lactation seemed to be a frequent cause of insanity, it is generally very amenable to cure ; and notwithstanding that the malady may arise oftener from parturition than from lactation, it comes on, relatively speaking, in a greater number of cases after weaning, than during the period of suckling. The disease more commonly attacks females between twenty and thirty, than at other periods ; is more serious in single than in married women, mania being the most frequently observed ; and that three cases in five usually occur before the fourteenth day after delivery ; whilst the danger is always diminished, the later the period at which the attack comes on after parturition. Formerly, Puerperal Insanity was comparatively less frequent, but more fatal than recently. Dr. Haslam, for instance, reports that, during the time he resided at Bethlem Hospital, only eighty-five cases of Puerperal Insanity were met with in 1644 lunatic females admitted into that institution, being at the rate of five cases in every one hundred admissions. Again, Dr.

Burrows records ten deaths, besides one suicide, in fifty-seven cases, which came under his immediate observation, being more than quadruple the mortality mentioned by the author in the first part of this paper; whilst, according to Dr. Copland's experience, one out of every eight cases of puerperal mania usually terminates fatally.

Treatment of Puerperal Insanity. Considering cerebral irritation, combined with great exhaustion of the nervous system generally, to constitute the true character of this disease, and that it rarely, if ever, proves inflammatory, Dr. Webster thought depletion, or the use of strong antiphlogistic measures, very seldom admissible. Leeches appeared in some cases advisable; but even then, they should be applied with great caution, and their effects carefully watched. As a general maxim, the same principles ought to be followed, as in delirium tremens. Opium, camphor, ammonia, and aromatics, with some of the diffusible stimuli, proved excellent remedies, and ought to be chiefly relied upon. When opium fails to procure sleep—so beneficial in this, as indeed in every form of insanity—then conium, hyoscyamus, or Indian hemp, may be substituted. Mild purgatives, and sometimes cathartics, should be prescribed; but powerful drastic medicines are seldom advisable. Enemata are also useful, conjoined sometimes with turpentine. When the disease assumes a more chronic form, setons or issues in the neck, and counter-irritation may be employed. The shower-bath, from its strengthening influence, then acts beneficially; whilst tonic remedies, with more nutritious food, become necessary, and prove advantageous. Low diet is very often prejudicial to the insane, and it has been long remarked, that improved nutriment, especially in lunatics who have previously suffered privations, frequently becomes a powerful means for promoting recovery. In recent cases of Puerperal Insanity, when the circulation is accelerated, accompanied by evident congestion of the brain, leeches to the temples, and behind the ears, or blisters, might be applied, and afterwards cooling lotions, with ice to the head; whilst tartar emetic, or ipecacuanha, in nauseating doses, and digitalis, may be administered for the same object. Besides medical treatment, moral means, with judicious occupation and amusements, very often constitute effective adjuncts. The author narrated two Cases of Puerperal Insanity, one being affected with mania, the other with melancholia. The first (the maniacal patient), a single woman, aged twenty-one, whose child did not survive, had hereditary tendency to mental disease, but was reported as not suicidal. She was very noisy, incoherent, often much excited, frequently very wild, violent, exceedingly mischievous, used bad language, destroyed her clothes, and paid no regard to personal cleanliness. She took food voraciously, was very restless at night, and dirty in bed. The pulse was generally quick, and bowels were constipated. Cooling saline mixture, croton oil, on one occasion, and regulated diet, were the means used. Subsequently, bodily occupation and amusements were put in requisition, whereby she became convalescent. The second case was an example of the variety denominated melancholic. In this patient, a married woman, aged thirty, suicidal and hereditary tendency to mania existed. She was hasty in temper, but naturally cheerful. The attack commenced a month after delivery; and her child was weaned when six weeks old. She had been much debilitated by hæmorrhage after labour; appeared often very depressed and melancholic; was generally very desponding of her insane state, and had attempted to injure herself. She took food very unwillingly; could not sleep at night; would scarcely remain in bed, and endeavoured to escape from her room. The pulse was natural, and the bowels regular. Early in the disease, leeches were applied once to the temples, and afterwards blisters to the neck on three occasions. Opiates and camphor were prescribed, with purgatives, especially the compound decoction of aloes. Latterly, the cold shower-bath and tonic medicines were employed. The diet, at first light, was subsequently more nutritious, and malt liquor was allowed; by which means, and by proper occupation, subsequently conjoined with

amusements, she recovered. Mechanical coercion was, in Dr. Webster's opinion, even more inapplicable to puerperal insanity than to ordinary cases of mania; because wherever the strait-waistcoat is adopted, lest the patient might injure herself (the excuse commonly assigned by attendants), exasperation and excitement appear more frequently as a consequence of, than a warrant for, such barbarous proceedings. This is especially true of suicidal patients: experience demonstrates that the mechanical restraint of persons so disposed), and even of individuals who have never shown any propensity of the kind), often acts as a highly exciting cause of suicide. The degradation which lunatics feel when treated like criminals, frequently produces most injurious effects. If the insane patient, subjected to such cruel treatment, be a female of delicate constitution, susceptible feelings, and high accomplishments, the objections to the strait-waistcoat, or similar mechanical means of coercion, become much stronger, as the results, in all likelihood, will prove more disastrous.

December 2, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

Rheumatism, and Heart Disease. By Dr. R. C. Golding. A dress-maker, aged twenty-four, had been under Dr. Golding's observation, and often treated for rheumatism by him during more than three years. Dr. Child had attended her during her last illness, and had invited Dr. Golding to the autopsy. The cardiac disease had lasted for six or seven years, its symptoms not having materially varied since she first came under Dr. Golding's care. Her health, when free from rheumatism, was tolerably good; and as great caution in diet and regimen was enjoined and punctually observed, her life was prolonged, till the accession of the pleurisy and bronchitis, for which Dr. Child attended her. The physical signs indicated great hypertrophy of the heart, with double valvular disease of its left cavities. Dulness was appreciable along the lower half of the sternum, as high on the right side as the cartilage of the third rib, and on the left to the second rib. The apex of the heart was felt beating between the seventh and eighth ribs, three inches at least more to the side, than in health. The sounds were feeble; the rhythm, under ordinary circumstances, not impaired; the impulse strong; and the pulse full and bounding. There was a double murmur at the apex, and a very loud and rough diastolic sound at the upper part of the sternum, at its sides, and along the neck. *The autopsy* revealed great thickening of the tricuspid, mitral, and aortic valves: the two former formed perfect rings around the auriculo-ventricular openings, which must have been patent during life; the pulmonary valves were healthy; and the aorta above the valves was much contracted. The pericardium was thickened, but nowhere adherent or unduly vascular. There was recent pleurisy of the right side, and great congestion of the lungs, with a little emphysema. The gall-bladder contained a few small calculi.

Dr. Golding considered that the heart (which he exhibited) showed clearly that rheumatism was the cause of the valvular lesion in both ventricles; that the same disease, influencing the valve in precisely the same manner, and relatively in the same degree, existed in both tricuspid and mitral valves; and that the perfect rings formed by the adhesion from inflammation of the divisions of the valves respectively (together with the thickening, shortening, and adhesion of their chordæ tendineæ), must have been attended, during life, with permanent patency of their orifices.

Case which presented many Symptoms of Laceration or Rupture of the Uterus. By Dr. S. Wm. J. Merriman. A woman, aged twenty-eight, in labour of her third child, was found with the os uteri fully dilated, the bag of membranes dilating the vagina, and the vertex presenting over the pubis. The membranes having speedily ruptured, the head descended, but not so as to occupy the whole brim of the pelvis; on the contrary, very violent pains

drove it rather against the pubis and fore part of the vagina. After an hour's duration of unusual suffering, chloroform was exhibited for two hours, in hopes of mitigating the suffering, while the pains propelled the head gradually downwards; but this not ensuing, three doses of ergot were given, without any pains succeeding. Vomiting and tenderness of the abdomen came on about this time, to relieve which the patient had forty minims of laudanum. After some hours, it was found that the head had been completely retracted, and the constitutional disturbance still continuing, Dr. Chowne's advice was sought. The woman was delivered by turning, twelve hours after the cessation of the pains. The child, which was dead, lay very high up, yet still within the uterus, and the hand was first reached. The uterus contracted well. The patient recovered.

December 9, 1848.

Francis Hird, Esq., V.P., in the Chair.

Acephalous Monster born at the full period of Pregnancy. By Mr. Harvey. Another child accompanied it, which was remarkable for its badly-nourished condition; the funis was small and short; there were two placentæ; that belonging to the monstrosity was very large. When it was born, the integuments presented a dark blue colour above the umbilicus, and below it a pale red. The exterior view presented no head or upper extremities: the inferior extremities, large and well-formed, terminated in club-feet; the left foot had three toes, the right five, each furnished with a nail. On the fleshy substance above and between the shoulders, representing the head, were observed some slight tufts of hair, and two button-shaped fleshy substances, the one in the centre and the other to the right side. The external organs of generation were well marked as a female, and the anal aperture communicated with the intestinal tube. An incision was made through the centre of the body, with the view of inspecting the parts within; it brought into view a cavity containing the base of the skull resting on the atlas on either side, bounded by the ribs; neither clavicle nor sternum was present. The cavity was filled with loose cellular structure and a sac, which might contain about a teaspoonful of fluid; the internal layer resembled the fibrous structure of the auricles of the heart. The connexion of the sac with the umbilical vessels was made out, but no vessel could be discovered running from it; perhaps this was in consequence of decomposition. A large vessel, probably the aorta, took the course of the vertebral column on each side, and terminated in four distinct branches at the sacrum, two running to the anterior part of the thigh, and two to the posterior. There was an absence of all the viscera of the abdomen, excepting the intestinal tube, which was closely adherent to the abdominal parietes. The urinary organs and the internal organs of generation were also absent; the spinal portion of the skeleton was greatly incurvated, and on each side of the three upper ribs was a loose portion of bone resembling a scapula. The spinous processes of the vertebræ were much enlarged, and the vertebral canal was filled with spinal marrow; the nerves arising from it were observed to be large and irregularly distributed. Very little muscular structure was observed; the anterior parietes of the abdomen being composed, solely, of common integument and adipose structure. Mr. Harvey exhibited the fœtus.

Collodion. Mr. I. B. Brown stated, that he had used Collodion with advantage in cases of sore nipples.

December 16, 1848.

John Webster, M.D., F.R.S., President, in the Chair.

A Preparation of an Ununited, Comminuted Fracture of the Surgical Neck of the Humerus, accompanied by Displacement of the Long Bicipital Tendon; also, an Example of Unreduced Dislocation of the

Radius forwards at the Elbow, with Partial Luxation of the Ulna inwards, were exhibited by Mr. Canton. Both specimens were removed from the right arm of an elderly female, and no history of them could be ascertained. In the first preparation a strong fibrous capsule was formed, enclosing the ends of the broken bone, and in it were entangled the comminuted fragments, one of which was coated with porcellanous material, in a manner similar to that part of the surface of the shaft it had played on. The shaft was drawn upwards and inwards; the biceps tendon was well retained in its new situation on the lesser tubercle of the humerus, and the articular surface of the bone was directed unnaturally outwards. In the second preparation, Mr. Canton remarked, it was interesting to observe the great degree of mobility which Nature had established, though the accurately-fitting surfaces of the ulna and humerus no longer rightly corresponded with each other; and this had been obtained by a modification of the form of the trochlea, and by extension inwards of its surface; so that, from this latter circumstance, the projection of the internal condyle was altogether lost. The head of the radius revolved freely in a broad cavity above the capitulum humeri, and was retained *in situ* by a strong coronary band passing from the external condyle to the anterior edge of the lesser sigmoid cavity of the ulna. The coronoid fossa was obliterated, and the pit for the olecranon nearly filled up.

Case of Perinæal Abscess, with Symptoms resembling Quotidian Ague. By Mr. Henry Smith. The patient—a gentleman of middle age—had been under treatment for a month, when Mr. Smith first saw him. On the third day after the first visit, he called Mr. Smith's attention to pain in the perinæal region, and, on inspection, a tumour was discovered containing matter, which was evacuated in large quantities; and on the following day, a stricture having been discovered, a small catheter was passed. The patient was greatly relieved, and recovered quickly, having had no return of the rigors, or other feverish symptoms. It was far from uncommon to meet with cases in which symptoms simulating ague accompanied diseases of the urinary apparatus, especially perinæal abscess; but it was rare for the symptoms to be so prominent, and so strikingly similar to ague. They alone had attracted the attention of the practitioner who had attended him.

Mr. Harvey questioned the propriety of passing the catheter so immediately after opening the abscess. The latter step removed all the urgent symptoms, and, in fact, was the best proceeding that could have been adopted for the relief of any stricture. Even if there had been a communication with the urethra—which in this case there was not—so early an interference was objectionable, being apt to do mischief in parts already made liable to be injured, by the formation of matter.

Mr. Hird did not object to the use of the catheter after the abscess was opened; but he should not have employed it so early.

Mr. Canton thought the use of the catheter good practice, if employed at a *later* stage.

Mr. Wade did not see any objection to the use of the catheter soon after opening the abscess. The stricture might be treated at once.

December 23, 1848.

Francis Hird, Esq., V.P., in the Chair.

Fatal Scarlatinal Dropsy and Convulsions. By Mr. Henry Smith. He had been called to a case of Scarlatinal Dropsy, in a lad of 16, commencing about ten or fourteen days after the eruption appeared. The boy was in a fit; he applied a blister to the neck, and gave a strong purging dose; the convulsions, however, recurred frequently, and in the evening he bled him to eight or ten ounces. Immediately, the convulsions ceased; but the respiration became very difficult, from obstruction in the bronchi, and he died from asphyxia, the next morning. Before bleeding, the pulse was quick and

sharp, and the pupils dilated ; the urine was very scanty, and of a deep red colour. Mr. Smith asked if the bleeding had accelerated death ?

Chloroform in Parturition. By Dr. Snow. He said that the chief objections which had been made to the use of anæsthetics in midwifery were of an *à priori* kind, but that the question ought to be decided by experience. Some objections had arisen from the supposed necessity of inducing a deep state of insensibility, and he was of opinion, that if it were requisite to cause the same amount of insensibility in midwifery, as is required in surgical operations, this would be a valid objection, as he considered that this state could not be continued for two or three hours without injury to the patient. But this amount of insensibility was not required in obstetric practice, except to arrest or diminish strong uterine action for a few minutes to facilitate turning the child. The suffering, attendant on labour, might often be greatly relieved, or even altogether removed, without suspending the consciousness of the patient. Towards the conclusion of labour, it was usually necessary to carry the effect of the vapour a little farther ; but even then it should not exceed the second degree of anæsthesia, or that condition of the patient in which the mental functions are not altogether suspended, but in which there is a dreaming or wandering state of the mind—the patient, nevertheless, usually remaining silent if not spoken to. In labours unassisted by manual or instrumental aid, the auxiliary action of the respiratory, and even of the voluntary muscles, continued without interruption when the Chloroform was well managed. Dr. Snow thought that a medical attendant acquainted with the action of Chloroform, and the mode of applying it, might administer it with propriety in all cases, in which the pain was either severe or protracted, whether they fell within the division called natural labours or not. He then related two cases in illustration of the beneficial action of Chloroform. He had used an apparatus in administering it, giving a little at the beginning of each pain. He disapproved of Dr. Simpson's plan of giving Chloroform on a handkerchief, and more particularly of his practice of putting three or four drachms on the handkerchief to begin with. To show the danger of this practice, he alluded to the fatal cases published, and read some notes, furnished to him by Mr. Henry Smith, of a case in which the patient very nearly lost her life from Chloroform given in this manner, preparatory to an operation. Chloroform was of great service in removing rigidity of the os uteri and of the perinæum ; and it had relieved puerperal convulsions in two cases on record.

Dr. Snow concluded by remarking that as all medical men were actuated in their views only by a desire for the well-being of their patients, the difference of opinion in the profession concerning the employment of Chloroform in midwifery ought not to be attended with any acrimonious feelings.

[The discussion on Dr. Snow's paper was adjourned.]

January 6, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Excision of the Os Calcis. Mr. Hancock related a case, in which he had removed the Os Calcis from a patient suffering from caries of that bone,—a proceeding which he believed had never been previously adopted ; and although, from the causes detailed, the case did not terminate so favourably as could be desired, still the operation had succeeded in two instances, related by Mr. Greenhow, at the Newcastle and Gateshead Pathological Society, and was therefore worthy of consideration. Case. R. W——, aged 24, a butcher by trade, and of scrofulous diathesis, was admitted into the Charing-Cross Hospital on the 23rd of May 1848. He was suffering from caries of the Os Calcis of the right foot, with abscess ; the bone was rough, but not loose. His other leg having been removed some two or three years before, for scrofulous disease of the knee-

joint, Mr. Hancock was anxious to preserve as much of the remaining foot as possible, and accordingly decided, as the disease appeared to be limited to the Os Calcis, to confine his operation to the removal of that bone alone. Accordingly, on the 2nd of June, the patient having been placed under the influence of chloroform, assisted by Mr. Avery and Mr. Canton, he removed the bone, by carrying a semilunar incision from the posterior angle of the inner malleolus across the sole of the foot, to the external malleolus, the convexity of the flap looking forwards. The flap, thus made, was carefully reflected, the tendo-Achillis divided, and the knife being carried from behind, forwards, between the astragalus and the Os Calcis, the latter was dissected out without any difficulty. Two or three vessels were tied, and the flap being brought over, the edges were united by sutures and strapping. The patient went on extremely well until the 6th, when erysipelas came on, accompanied with severe constitutional disturbance. On the 9th, a considerable portion of the flap sloughed, and it eventually came away on the 16th, but sufficient skin remained to cover the bones completely. He continued to improve until the middle of July, the external wound being almost healed, and the foot becoming firm and of good shape; but at this time he was again attacked with erysipelas; several abscesses formed in the limb, both in the foot, above and below the wound, and in the leg and ham; his strength gave way, he became very low and weak, and it was evident that there was very little probability of saving his limb; but being anxious to give him every chance, Mr. Hancock determined to try the effect of the protein, so highly recommended by Mr. Tuson, and this was accordingly given in doses of fifteen, afterwards increased to twenty grains, thrice daily. For some time his general health improved, but the foot did not mend; and at length, as the constitutional symptoms returned, and further delay appeared dangerous, the leg was removed at about five inches below the knee, on the 6th of October, just four months after the former operation. Mr. Hancock was inclined to attribute the want of success of the first operation to the state of the patient's constitution, and the attacks of erysipelas, rather than to other causes; and he was confirmed in this opinion by the success which had attended the two operations since performed by Mr. Greenhow, both of which were cases of accident and not disease. Mr. Hancock considered that this plan was well worthy the consideration of the profession, and should be selected in patients of good constitution, or in accidents, where the mischief was confined to the Os Calcis, rather than the methods hitherto employed, as thereby the ankle-joint is preserved entire, a matter of considerable importance to the patient. In conclusion, he corrected an error into which Mr. Greenhow had inadvertently fallen in the relation of his two cases, in stating that "the operation had never been performed before he did it." Mr. Greenhow had the credit of the first successful case, but the dates of the several operations prove, that Mr. Hancock was the first to introduce the plan into the practice of surgery. His operation was performed on the 2nd of June, above ten weeks before Mr. Greenhow's first, which took place on the 15th of August, whilst his second was performed on the 17th of October.

Chloroform in Midwifery. (Adjourned Debate.) Mr. Gream objected altogether to the use of Chloroform in Obstetrics. It had a cumulative property which might suddenly develope itself, and destroy the patient. He believed that a very short time only would elapse before Chloroform would cease to be heard of in midwifery. Mr. Gream entered into an elaborate statement of his objections. They were of two kinds; *moral* and *medical*. Under the *first head*, he quoted a humorous description by Mr. Miller, of the first discovery of Chloroform as an anæsthetic agent. The effects were very decided; at first simulating the "victorious" nonchalance of "Tam O'Shanter", and ending with the Edinburgh professors kicking and sprawling under the table. Mr. Gream then alluded to several cases in which women

had, under the influence of Chloroform, made use of obscene language. This latter fact alone he considered sufficient to prevent the use of Chloroform in English women. The *medical reasons* consisted of the fact of his having heard of twelve cases of convulsions arising from its use ; and five cases of mania following its employment.

Dr. Sibson considered, that in all cases in which there was a tendency to congestion in the head, Chloroform was unadvisable.

Mr. Hird argued, that the objections against Chloroform might be urged with equal weight against other poisonous remedies, such as opium and arsenic, but with no better foundation.

Dr. Tanner mentioned a case of an operation in King's College Hospital, on the vagina of a prostitute, in which ether produced lascivious dreams.

Mr. Hancock had noticed this effect in some operation cases.

Tracheotomy for Obstruction in the Larynx. Mr. Henry Smith related a case of Obstruction in the Larynx, in which he had resorted to the operation of Tracheotomy. The patient, eleven months of age, had suffered from chest affection for several days ; and three days before he saw it, symptoms of obstruction in the upper part of the air-passages presented themselves. When he was called, he found that interference was immediately called for, and at once proceeded to open the trachea. This he did in the usual way, with the loss of about an ounce and a half of blood. The operation lasted about a quarter of an hour, time being taken over it, as the little patient was very weak. The child lived six hours after the proceeding, and on examination, the trachea was found healthy, the lungs being in some parts congested. The disease was confined to the pharynx and larynx, which had been inflamed and thickened, the epiglottis and glottis being involved in the mischief.

Dr. Willshire thought that Tracheotomy was more likely to be successful in cases of croup than in diphtherite.

Dr. Sibson had observed a diagnostic mark of obstruction in the larynx, which he thought might be relied on. When such obstruction existed, there was not only a hissing noise, but the walls of the chest collapsed in inspiration, the chest becoming narrower and flatter, whilst expiration was longer and slower than inspiration. In diphtherite, where there was no obstruction beyond the tube, he saw no evil in Tracheotomy. In this operation, one of the most important evils to be avoided was the entrance of blood into the air-passages, and this was best prevented by the use of a trochar and canula. In some cases, the introduction of a male catheter through the glottis had been successful in preventing the necessity of operation.

Fungus of the Bladder. Mr. Nunn exhibited a bladder containing a small fungous growth, taken from a patient in the Middlesex Hospital, into which he had been admitted on December 6th, for hæmorrhage from the urinary organs, then existing about four days. No disease whatever could be felt by the hand applied over the pubes, or by the finger in the rectum, or by the catheter, and the man gradually died from hæmorrhage, losing from six to eight ounces of blood a day. He had had gout, but not for five years. The microscope showed pus-globules in the urine.

January 13, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Chloroform in Midwifery—Adjourned Debate. Dr. Rogers said, that so far from the Chloroform causing immoral emotions, in his practice he had noticed the very contrary effects, as during the delivery the patients were not only thankful, but prayed most eloquently, and sang psalms and hymns in an angelic strain. He had given Chloroform in twenty cases. In all it seemed of the greatest service, and in none had he been able to trace ill effects.

Dr. James Reid was not an opponent to the use of Chloroform in obstetric practice. He had, however, never advocated its employment, and his experience of late had tended to make him think even less favourably of it than he formerly did. He entered at some length into three cases in which he had employed it. In the first instance, a lady who had suffered severely during her first five confinements, in which he had attended her, but in all recovered without a bad symptom,—had in her sixth confinement taken Chloroform. He did not believe that it had at all diminished her sufferings, and from that hour to this, a period of three months, she had been a dreadful invalid, suffering from a train of nervous symptoms, such as he had never witnessed, and of which Dr. Merriman only recollected one parallel instance in his vast practice, *and that was the result of intense drunkenness.* The chief symptoms in this case were most distressing sickness and headache. In other cases, the Chloroform had not relieved the pains of labour.

Mr. Wade had employed Chloroform pretty extensively in private and dispensary practice, in all kinds of persons and various kinds of operations; he had never seen any "immoral" effects produced.

Dr. Snow replied at great length. *In vino veritas* was a proverb as applicable to Chloroform as to alcohol; and under no circumstances would "moral" women use "immoral" expressions.

January 20, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Ruptures of the Uterus and Vagina. By Mr. R. Greenhalgh. The author stated, that out of 78,018 deliveries occurring under the superintendence of Drs. Ramsbotham, Collins, Hardy, McClintock, Joseph Clarke, and McKeever, this accident occurred eighty times, or once in 975 cases; out of 71 recorded cases by these authorities, 66 were fatal to the mothers—five only having recovered, or about 1 in 14. Out of 18 deliveries, 17 were fatal to the children. He then gave the result of nine cases recorded by Dr. Murphy, in the seventh volume of the *Dublin Journal of Medicine*, all of which were fatal to the mothers; eight of the children were still-born; one, a girl, was born alive; three mothers were 36 years of age—two, 30—one, 46—one, 26—one, 21. Two were in their tenth labour; two, in the first; two, in the third; one, in the eleventh; one, in the sixth; one, in the fifth. Eight were delivered by the crotchet; one by the natural efforts. One mother died eleven days after delivery; one, eight; one, six; one, four; one, three; one, two; two in thirty hours; one in twenty-four hours. In five cases the rupture occurred in the anterior part of the cervix uteri; two in the posterior; one patient was not examined, and in another no spot is specified as the seat of the accident.

The author then detailed a case to which he had been called. The patient was 35 years of age, in labour with her sixth child; the arm and shoulder presented, but this position was converted, by one of the gentlemen in attendance, into the first position of the head, about two hours after which she complained, during a pain, that something had given way in her inside; vomiting, fainting, extreme prostration, oozing of blood from the os externum, together with recession of the presenting part, speedily followed. While suffering from these symptoms, Mr. Greenhalgh was first called upon to visit her. After giving her some brandy and laudanum, he proceeded to turn the child, which he accomplished with some difficulty in the space of about three-quarters of an hour, having first removed the placenta from the vagina, where it was found lying unattached. The child was still-born; the shoulder and arm were much swollen and ecchymosed, and over the right parietal bone was a distinct scalp tumour. She sank sixty hours after delivery, from exhaustion, in spite of a frequent and liberal supply of nourishment and stimuli. No circumstance had occurred during her pregnancy to induce her to seek medical advice; although, when closely questioned, she admitted

that she had suffered more than usual from sickness, pains in her breasts and in the left iliac fossa, and that when the child moved it gave her an idea that it was passing "over a sore place". No post-mortem examination was permitted; but during the operation of turning, a large rent was discovered, through which the child had escaped into the abdominal cavity, extending from the anterior and upper part of the vagina, through the os and cervix uteri, and passing obliquely to the right side of the pelvis. Mr. Greenhalgh drew the attention of the Society to the absence of symptoms, during this patient's pregnancy, of softening and inflammation; to the comparative immunity from this accident in women who have complained of tenderness, pain, and other symptoms usually regarded as indicative of uterine inflammation, which have gone on unchecked by medical treatment; to the feebleness of the uterine efforts in this case; and the very unusual circumstance of the conversion of a shoulder and arm presentation into that of the head.

Another case occurred in a patient of the Middlesex Hospital. The patient was about thirty-five years of age—it was not her first confinement—she had been some hours in labour—the breech presented—rupture of the uterus took place, followed by vomiting of a very violent character, great exhaustion, partial escape of the presenting part into the abdominal cavity, and more or less discharge of blood from the os externum. After having given a dose of brandy and opium, Mr. Greenhalgh brought down the feet of the child, which he extricated without delay; the infant was still-born. The patient sank shortly afterwards from exhaustion.

Mr. Greenhalgh detailed two doubtful cases of rupture. One was a first labour, the other an eighth—both female children. In the first, the pains were irregular and spasmodic; in the second, perfectly natural in recurrence, and above the average strength. In both the head presented; one was of natural conformation, the other hydrocephalic; the first was expelled by the unaided efforts of nature, the second by perforation; a sensation, as if something had given way in the abdomen, during a pain, followed by a partial recession of the presenting part, was present in both cases; also great prostration, vomiting, but not of coffee-ground fluid, escape of blood from the vagina, and subsequently acute peritonitis. Both mothers recovered, and have since borne male children, without any untoward occurrence.

The author concluded by stating, that he considered this accident more common than was generally supposed; that it far more frequently occurred in patients who had had many confinements, than in primiparæ; that the seat was usually found in the cervix uteri and the upper part of the vagina; that ergot of rye might cause this accident, by increasing the action of an attenuated uterus, but not by producing any structural change in that organ. The Cæsarian operation, in the case first recorded, would, he thought, have given the patient a much better chance, than the forcible attempts to extract the child.

January 27, 1849.

Francis Hird, Esq., V.P., in the Chair.

Case of Scarlatina, followed by Purulent Deposits. By Dr. Routh. The child was three years old, and was first taken ill on the 7th of January, with symptoms of general fever. On the 8th, the eruption of scarlatina and an otitis made their appearance. The fever progressed favourably, and lasted eight days, or till the 15th. On the 17th, the mother noticed the desquamation of the cuticle. On the 18th, feverish symptoms again appeared, the otitic discharge having persisted throughout, and in no way diminished. Next morning, the 19th, the face and body were swelled, but pale. By accident, the mother noticed a swelling about the size of a goose's egg in the left side of the abdomen. On the 22nd, a swelling about the size of a pigeon's egg appeared over the internal condyle of the right humerus. Dr. Routh first

saw the child on the 26th instant. The abdominal tumour was then about the size of two goose's eggs, evidently situated between the parietes of the abdomen. A similar swelling, about the size of a small hen's egg, was situated over the inner condyle of the right humerus. In both, fluctuation was very distinct. The surface of the skin was very pale. Over the abdominal tumour, however, one tortuous and enlarged purplish vein was noticed. The left humerus was swollen, and apparently œdematous, but pale, and tender to the touch. There was no œdema elsewhere The aspect of the child was very unhealthy ; the tongue rather brownish ; the pulse quick and feeble. A puncture being made with an exploring needle in the swelling on the right humerus, indicated the presence of pus. The case was interesting, as exemplifying a rare form of sequela of scarlatina—the pus being effused externally to, and not within the joints, and also as being preceded by symptoms of renal dropsy. In regard to the treatment, Dr. Routh asked whether the pus should be evacuated or not ?

Two Bandages, applicable in the treatment of Ovarian Dropsy, were exhibited by Mr. I. B. Brown. The first, intended for the treatment with or without previous tapping, is made to lace up, and thus the amount of pressure can be daily increased. It is fitted with pieces of whalebone, to keep it smooth, and is secured round the thigh by straps. This bandage is equally beneficial as an abdominal support in other cases. The second form of bandage is applicable where pressure is required for a long time after tapping ; it is simple in structure, and fastens by straps and buckles, and contains an air-cushion, which, being emptied or filled, lessens or increases the pressure as it is required, without the necessity of undoing the bandage.

Fibrous Tumour, compressing the Ureters, and causing Renal Disease. By Dr. Murphy. A woman applied to the author, having the pelvis occupied almost entirely by a firm tumour, so that the os uteri was beyond the reach of the finger, and micturition impossible, except by the aid of a catheter. After a few days he was called to her, and then passed a gum elastic catheter to its full length, but obtained no urine, although she was suffering from symptoms of retention of urine ; she rapidly sank and died. On opening the abdomen, a large tumour was found, which had displaced the intestines, and reached upwards to the umbilicus, and laterally to the iliac fossæ. The mass of the tumour lay on the left side, and had nearly incorporated the uterus, which, however, with the right ovary, was found projecting from its right margin. The bladder was contracted and empty ; but the ureters, being compressed by the tumour, were enormously distended and tortuous. The kidneys were enlarged and in advanced state of Bright's disease. The tumour proved to be fibrous, engaging the whole posterior wall of the uterus, the cervix being stretched for some inches along its anterior surface, and expanded over it. The uterus had been drawn out of the pelvis by the growth of the tumour. A small portion in its centre was softer and more friable than the rest. The author drew attention to the unusual position of the tumour, occupying the pelvis so completely as to displace the uterus entirely ; to the advisability, if practicable, of pushing such a tumour out of the pelvis when small.

February 10, 1849.

Francis Hird, Esq., V.P., in the Chair.

Case of Hæmatemesis from Ulceration of the Gastric Artery. By Mr. Benjamin Travers. A widow, of middle age, and almost chlorotic in appearance, was seized with vomiting of blood ; she rallied a little, but in the night was again attacked, threw up a large quantity, and shortly afterwards died. On a post-mortem examination, the stomach was found to contain much grumous fluid, with a circular breach, like an ulcer, directly over the gastric artery, which was laid open by an orifice admitting the end of a blow-

pipe. The peritoneum was healthy. None of her medical attendants had ever suspected the existence of ulceration in the stomach.

February 17, 1849.

John Webster, M.D., F.R.S., President, in the Chair.

Case of Ulceration of the Cæcum, etc. By Dr. Ogier Ward. There was also enlargement of the mesenteric glands, which formed a tumour in the right iliac fossa of a girl aged nineteen, who had never menstruated. The diseased parts were exhibited.

The patient was of a sickly family, and had never been strong herself, the only appearance of menstruation being a very slight "show," four months since. She had been anæmic for the last three years, and during the last year had had wandering abdominal pains, supposed to be the access of the menses, but subsiding on fomentations being applied. The pains had been more frequent since the "show," but she was able to do the work of the house till January 13th, when Dr. Ward first saw her. Her bowels had been costive lately, but were then opened by medicine. The face had a slight hectic flush, the skin was hot and dry, the pulse 120, the tongue, hitherto pallid, was of a natural redness and moist; no appetite; no pain anywhere; no disease could be detected in the chest. The abdomen was soft and compressible in every part except the right iliac fossa, where a tumour existed, painful on pressure, of the size of an egg, defined upwards and towards the median line, but not downwards or outwards. The symptoms continued much the same till her death, on February 13th, but the fever, which assumed a remittent type, was completely controlled by quinine. Aphthæ formed in the mouth, and peeled off in large flakes the day before her death. The head was not examined. The lungs contained many miliary tubercles in the upper lobes. The stomach was large, and the lower portion of the œsophagus covered with ragged epithelium, like that on the tongue. The liver was enlarged, extending below the ribs of the right side, and far to the left of the epigastrium; the lobuli were all tinged with bile, and appeared slightly fatty. The spleen was about three times the natural size. The kidneys were about twice as large as natural, but apparently healthy. The omentum was adherent to the brim of the pelvis, and dragged down the transverse colon so as to conceal the small intestines. The lower portion of the ileum was ulcerated in spots down to the cæcum, which contained much fluid fæces, and was enormously thickened by tubercular deposit under the peritonæum. The mucous membrane was completely destroyed by a large ulcerated surface extending about ten inches up the colon, and then terminating abruptly. The mesenteric glands were much enlarged by tubercular deposits. The uterus was healthy. The ovaries resembled sparrows' eggs in size, shape, and colour, being enveloped in a cartilaginous membrane half a line thick. The tumour was formed partly by the cæcum, and partly by the enlarged glands. Its want of definition downwards was caused by the diseased mass descending into the pelvis, where it had contracted firm adhesions.

Ballot for the Election of Officers. The following Fellows were elected office-bearers for the ensuing year:—President. Francis Hird, Esq. Vice-Presidents. E. W. Murphy, M.D.; John Snow, M.D.; E. Lankester, M.D., F.R.S.; J. F. Marson, Esq. Treasurer. Aug. Sayer, M.D. Honorary Secretaries. S. W. J. Merriman, M.D.; R. Greenhalgh, Esq. Council. C. Wing, Esq.; J. W. Woodfall, M.D.; I. B Brown, Esq.; W. Harding, Esq.; W. R. Rogers, M.D.; W. D. Chowne, M.D.; A. B. Garrod, M.D.; F. R. Manson, M.D.; W. Harvey, Esq.; T. H. Tanner, M.D.

February 24, 1849.

Francis Hird, Esq., President, in the Chair.

Remarkable Disease of the Scrotum. Mr. Canton narrated the case which we reported at p. 466 of our May Number.

March 3, 1849.

Francis Hird, Esq., President, in the Chair.

Iodide of Potassium in some cases of Strumous Corneitis, Hypopion, and Syphilitic Iritis. By Mr. Hancock. The author employs this remedy extensively in strumous inflammation of the cornea, attended with opacity from interstitial deposit; in interstitial abscess of the cornea; in iritis, attended with effusion of matter into the anterior chamber; in rheumatic inflammation of the sclerotica and iris assuming the chronic form; and, indeed, in all cases of deep seated inflammation of the eye occurring in debilitated or irritable constitutions. He considers it superior to calomel, exerting its absorbent powers more quickly and with greater certainty, and without, in the majority of cases, producing the distressing ptyalism. In syphilitic iritis, he seldom found it necessary to push mercury to any great extent, and usually gave two grains of it every night at bedtime, combined with opium; and at the same time the iodide of potassium mixture twice a day; using the latter medicine in the formula recommended by Lugol.

March 10, 1849.

Francis Hird, Esq., President, in the Chair.

Case of Chronic Rheumatic Arthritis of the Shoulder and Hip Joints. By Mr. Canton. The preparations of these articulations were exhibited. James Harrison, aged seventy-nine, a tall, emaciated, and feeble man, stated, that in the year 1805 he "got thoroughly wet through," and the next morning suffered from rheumatism of the right shoulder, but in no other part. This was his first attack, of which Dr. Hope, of Edinburgh, relieved him in a short time. Up to the winter of 1847 the joint had been free from uneasiness, except in damp or frosty weather, when a "sensation of gnawing" in the part, troubled him whilst the inclement weather lasted. This inconvenience, however, was not of a nature to prevent him following his usual work, as a gentleman's servant. In unfavourable weather the pain was always aggravated "when warm in bed." In the winter of 1826 he caught a violent cold, from which time the left hip was affected with pains, which, like those of the shoulder, were invariably increased in frosty or damp weather, and when in bed. The pain was always especially felt "the first thing in the morning," whilst a sensation of cracking and grating in the joint was frequently complained of; at the same time the sound emitted, particularly when rising from a sitting posture, was audible to, and remarked upon by, the by-standers. Nine or ten years ago he entered the Middlesex Hospital, under the care of Mr. Arnott. Various applications were employed without relief; and at the expiration of a month, the nature of the disease and its intractable character having been explained to him, he quitted the hospital. At this time he walked lame, and was informed, after admeasurement of the limbs had been made, that the left leg was shorter than the right.

When seen by Mr. Canton, no great difference was noticed, as the opposite hip had become similarly affected. No distinct attack of rheumatism occurred to the shoulder since that above mentioned, but it continued the seat of the same symptoms as those previously described during the last twelve months. On applying the hand over the joint, and then rotating and circumducting the humerus, a very well-marked articular crepitus was heard, and the peculiar sensation characteristic of it, also, was communicated to the touch. The crepitus was most readily felt when, in circumduction, the arm passed forwards from the side of the chest; the movement producing, at the same time, an indescribable uneasiness in the articulation; pressure on the deltoid muscle, so as closely to approximate the joint-surfaces of the humerus and scapula, gave no pain, nor was any inconvenience experienced when the head of the humerus was directed against the under part of the acromion

process. The arm could with difficulty be elevated or directed forwards or backwards. The deltoid of either side, in common with the muscles generally, was much wasted ; little, if any, difference was to be noticed, however, between the two sides. Measurement did not show the right humerus to be nearer the acromion process than it was on the left side. An incessant dull pain, aggravated by motion, was complained of in the joint, and extending thence down the front of and along the inner side of the arm to the elbow. The acromio-clavicular articulation presented a partial dislocation of the clavicle, which was elevated, and appeared to be fixed near to the upper edge of the articular surface of the acromion process. This joint on the opposite side was in all respects normal.

Post-mortem examination. 1st. Shoulder. The glenoid cavity was more shallow than is natural, in consequence of an expansion of its outer part depending upon the deposit of new bone in the glenoid ligament, whereby the surface for articulation with the humerus was rendered additionally broad. The long tendon of the biceps, as it passed through the joint, was considerably flattened, expanded, and divided into four or five slips, placed side by side. This condition of the tendon had permitted the head of the humerus to shift upwards, and, thereby, to articulate with the under part of the acromion process, in which situation was seen a broad surface, against which the former played. The capsular ligament, however, was intact. The great tubercle of the humerus was flattened, and three of the capsular tendons at their insertion were, in part, absorbed. In the opposite shoulder similar changes were in progress, but they had not proceeded to so great an extent as in the fellow joint. 2nd. Hip-joint. This showed the ravages of chronic rheumatic arthritis to have progressed to a great degree. The acetabulum was much deepened, from bony deposit in the cotyloid ligament ; the encrusting cartilage was wholly removed, and at the upper and outer part of the cavity, porcellaneous material was present in a continuous sheet, and having a high polish. The ligamentum teres was absent. Bony plates were lodged in the capsular ligament. The head of the femur was mis-shapen, its form being accommodated to that of the acetabulum. The cartilage was wanting, and ivory-like deposit was present, corresponding in extent and situation to that in the cotyloid cavity. The cervix femoris was short, horizontal, and, at the anterior part, encroached upon by new bone, which sprang from the circumference of the head, and adhered to it in this situation. The cortex was thin, and the medulla abnormally soft and red. The fibrous structures, generally, of the articulation, were unduly vascular.

Dr. Webster's Presidency. Resolved unanimously, that "The warmest thanks of the Society be given to Dr. Webster, for the zeal, ability, and uniformly courteous conduct evinced by him during the period of his presidency."

Case of Anæsthesia and Paralysis of the Right Side of the Face. By Dr. Rogers. A light porter, aged twenty-seven, got a severe wetting, which gave rise to giddiness, deep-seated and shooting pain in the right temple, with deafness and buzzing in the corresponding ear, and considerable tenderness of the parts in front of it ; these symptoms were accompanied by a gradually increasing anæsthesia of the right side of the face, right nostril and orbit, and the right half of the palate ; the extent of the affection accurately corresponding to the limits of the anatomical distribution of the ophthalmic, superior maxillary, and temporo-auricular branch of the inferior maxillary nerves. Under treatment, this symptom began considerably to abate, and the patient, feeling himself much improved, ventured to go out of doors for the benefit of the air, but on his return, violent and deep-seated pain was felt in the temple, the conjunctiva of the right eye was found in an active state of inflammation, but quite devoid of sensation. Paralysis of

the face was now added to the renewed anæsthesia, both bounded by the before-mentioned limits. These symptoms were also attended by high febrile excitement; however, under treatment (leeches, blisters, fomentations, &c.), all the symptoms were much alleviated; but the inflammation of the eye still continued, and the deep tissues became involved, the iris being severely affected. Mercury, which had been employed for some time previously, was now administered more freely, but no salivation followed, although the mercurial fœtor was strong. Mr. Quain advised a continuance of the treatment adopted, especially the mercury. Under its use, after the lapse of a little time, sensation and motion began to return in the face, but the inflammation of the eye continued; and three distinct spots of puriform deposit made their appearance between the layers of the cornea, and gradually coalescing, engaged about two-thirds of it, so as completely to interfere with vision. The mercury was immediately discontinued, and in its place opium, quinine, iodide of potassium, with a bitter, were substituted. About this time the patient began to feel a dull pain in the brow, and could slightly elevate the upper lid, which had been hitherto immovable, though not from paralysis of the third pair of nerves; the eye could also feel a hot sensation from a solution of watery extract of opium dropped upon it. After three weeks' perseverance, the puriform deposit, which was never surgically interfered with, discharged itself externally, the iris became more natural, the pupil less angular, and the cornea less hazy; these beneficial changes being obviously connected with the return of sensation to the face, as in many instances noticed by Bellengeri, Magendei, Bell, and others. The patient from this time gradually recovered, and soon got well; a slight haziness of the cornea and an angularity of the pupil only remaining.

In similar cases it is important, with regard to prognosis, to be able to diagnose its centric or eccentric origin; whether it can be traced to a simple cold producing inflammation, as in the present case; or whether it arises from pressure upon the origin of the nerve, or from disorganization in some part of its course either within or without the cranium. The former class of cases are, usually, easily cured; the latter are almost hopeless.

March 24, 1849.

Francis Hird, Esq., President, in the Chair.

Case of Prolonged Retention of Urine, caused by Permanent Stricture. By Mr. Benjamin Travers. Mr. Travers was called to a young man for the purpose of giving the bladder some immediate relief. No water had passed otherwise than by drops for days previously, and the patient was dying rapidly from the local distress and bodily exhaustion. Mr. Travers operated in the following manner. The patient's chest having been raised with pillows, and the skin being incised in the median line, immediately above the pubic symphisis, a straight dropsy trocar and canula was next pushed into and through the anterior wall of the bladder. The relief was very decisive, but so sudden, as nearly to produce a fatal collapse. The patient was, however, presently restored by the administration of stimuli. The canula was tied into the bladder and stoppered; after some days it was removed, as it no longer hindered the escape of urine by its side, when the bladder became full. In about a month the wound had become fistulous, a small quantity of urine passing through it, the remainder flowing by the urethra. The patient's health being much restored, and the stricture not much enlarged by the use of bougies, Mr. Green, one of the surgeons of the hospital, cut down upon the stricture *in perinæo*, and so introduced a catheter into the bladder. After this, the patient gradually recovered.

The author remarked, that the first operation rescued the patient from immediate death, at a time when loss of blood must have proved fatal; and he quoted an instance wherein the patient died under such circumstances, before the bladder could be relieved by incising the perinæum. Puncture of

the bladder has had many able advocates from the days of Portean and Thiraud (1760) to the present time. Home, Abernethy, and Hey of Leeds, practised it repeatedly, and with great success.

The operation affords an interval of repose to the irritated urethra by diverting the passage of the urine for a time, during which that canal has been found so far capable of spontaneous restoration that the patient has subsequently recovered without any interference on the part of the surgeon, beyond the occasional use of a bougie. The circumstances of each case must determine the site of the operation ; but when it is admissible, and the relief required only temporary, puncture *per anum* is usually preferred. The author referred to a case of puncture *per anum* recorded in the "Philosophical Transactions" for the year 1776, which shows that the canula may be withdrawn, with perfect impunity, immediately after the evacuation of the bladder, and without risk of dangerous extravasation.

The author recommended puncture in preference to the incision *in perinæo*, in cases of extreme urgency, where there is great exhaustion of vital power. He protested against the hazardous practice of forcing an instrument through an enlarged prostrate, when that constitutes an insurmountable barrier to the onward progress of a catheter. He read a letter from Mr. Cock, approving of the operation of puncturing the bladder per anum. Mr. Cock leaves the catheter in for a time ; and, if irritation supervene, he passes a gum-elastic catheter through the canula, which is then withdrawn, whilst the catheter is retained in its place.

MISCELLANEOUS INTELLIGENCE.

Editorship of the Provincial Medical and Surgical Journal. The Committee of the Presidents and Vice-presidents appointed at the Anniversary meeting at Worcester, to fill up the vacancy occasioned in the office of Editor, by the death of Dr. Streeten, have unanimously appointed Dr. Ranking, of Norwich, and Mr. J. H. Walsh, of Worcester, conjoint Editors of the Journal of the Association. This appointment is subject to confirmation or rejection at the anniversary meeting, to be held at Hull in 1850. The great drag on this publication has been its fortnightly load of editorial matter, which, from the risk of displeasing their many masters, the writers must necessarily concoct in a too cautious, and often, therefore, insipid style. We would be glad to see good original memoirs, or translations of foreign papers, take the place of pointless leaders : and when the Journal requires to speak authoritatively, let it be in the form of Council Resolutions ; for no editors can please the majority of 1800 paymasters, without adopting a tameness of style and a balanced criticism, which everybody dislikes. Much good has been done by the *Provincial Medical and Surgical Journal;* and, with the benefit of the history of the past, much more may be hoped for under the new editors, who are both able men, and well qualified for their duties.

The Medical Societies. The London Medical Society resumed its meetings, in Bolt Court, on Monday the 24th September, when a paper was read by Mr. Harvey, on Rheumatism of the Ear. The Westminster Medical Society holds the first meeting of its Session for 1849-50 on Saturday, October 6th, at 8 p.m. (17, Saville Row), when a paper will be read by Dr. Webster on the "Health of the Metropolis during the last six months ; more especially in reference to the epidemic of Cholera." The Medico-Chirurgical Society does not meet till November ; but the library is now open.

British Association. The British Association assembled at Birmingham on Wednesday, 12th September, under the presidency of Professor Robinson. It broke up on the 19th September. The next meeting is to be held at Edinburgh, in the first week of August, 1850. Sir David Brewster,

Principal of the University of St. Andrews, was elected President, and the following noblemen and gentlemen Vice-Presidents ; the Earl of Cathcart, the Earl of Rosebery, the Right Honourable David Boyle, the Lord Provost of Edinburgh, (W. Johnson, Esq.), Sir Thomas Brisbane, Bart., the Very Rev. Principal Lee, Professor James Forbes, and Professor W. P. Alison.

Cholera in London. From the Registrar-General's return, it appears that the mortality from Cholera has rapidly declined. The deaths from all causes registered in London in the three weeks ending September 22, were respectively 3160, 2842, and 1981. The decrease has been exclusively in the Cholera deaths, which were 2026, 1682, and 839 in the three weeks. The deaths from Cholera, which, in the first week of September, were 300 and 400 a day, fell on the 19th to 110, and have not since exceeded 123.

Discovery of Peculiar Living Organisms in the "Rice-water" Evacuations of Cholera. Drs. J. G. Swayne and Brittan, of Bristol, having been for some time engaged, under the direction of the Medico-Chirurgical Society of that city, in the microscopic investigation of subjects connected with Cholera, state that they have discovered, in the rice-water discharges, and also in the atmosphere of infected places, certain living organisms, to which they are disposed to attach much importance in the etiology of Cholera. Dr. William Budd, of Bristol, in a letter to the *Times* of September 26, confirms their statements, and mentions that he has detected similar organisms in water procured from Cholera districts. Drs. Brittan and Swayne intend publishing the results of their researches : and, in our next number, we hope to be able to give a complete account of these discoveries. The plan pursued by Dr. Brittan has been to condense air taken from Cholera localities, and submit it to the microscope. As questions of priority may hereafter arise, we think it right to state, that the peculiar cells, which are supposed to be fungous in their nature, were first discovered simultaneously by Dr. Swayne and Dr. Brittan : after this, bodies, believed to be identical with those found in the rice-water, were discovered in the atmosphere by Dr. Brittan ; and, in the next place, Dr. William Budd appears to have observed them in water. Dr. Snow had previously directed attention to water, as the great medium of the communication of the Cholera poison.

An Ostler turned Doctor, Surgeon, etc. A good idea is afforded of the laxity of the law by the following communication to the *Lancet* of September 15th. The case has many companions. The most lucrative practice at Brighton is said to be in the hands of a cobler, who drives a pair ! "I was ill," says the correspondent of the *Lancet*, "at the renowned Ragland, and suspecting cholera, desired a doctor; one was sent for, and to my utter horror and astonishment I recognized in him the man who was industriously employed in putting-to the horses the last time I passed through the village ; but who now had set up as a surgeon—an effrontery, I hope, without parallel. Fortunately I detected the cheat before I had swallowed his drugs, or there is no knowing what might have happened. Coleridge says, 'a rogue is a fool with a circumbendibus.' What is a quack such as this ? I trust this letter will be the means of calling attention to this 'surgeon-ostler,' whose ignorance can hardly be less than his impudence ; and that is sublime. Would not the Apothecaries' Act reach this man ? It would be a merciful interference to stop the practising of impostors generally, but above all, such a barefaced example as this. I could but self-congratulate on my narrow escape from being victimized, and perhaps poisoned. Monmouth, August, 1849."

APPOINTMENTS.

Bennett, J. Risdon, M.D., appointed Physician to St. Thomas's Hospital, in the room of Dr. Henry Burton, deceased.

Gisborne, H. F., Esq., elected Surgeon to the Derbyshire General Infirmary, in the room of John Wright, Esq., resigned.

Hilton, John, Esq., elected Surgeon to Guy's Hospital, in the room of C. Aston Key, Esq., deceased.

OBITUARY.

Becker, Dr. C. F., at Offenbach-on-the-Main, recently.

Clarke, J. L., M.D., late Surgeon of H.M.S. Hydra, at Stockwell, Surrey, aged 40, on 1st September.

Crawford, William, M.D., at Glasgow, on 25th August.

Drever, Dr., in St. James's Square, aged 76, on 8th September.

Doney, Richard, Esq., Surgeon, aged 46, of Cholera, on the 24th August, at Tavistock.

Edsall, Richard Simon, Esq., in Bermondsey, of Cholera, aged 36, on 9th Sept.

Goldney, H., Esq., Surgeon R.N., at sea, lately.

Graves, Robert, M.D., at Delapré House, Bridport, on 9th September.

Harrold, Edward, Esq., Surgeon, at his residence, Cheshunt, Herts, aged 80, on 17th Sept.

Lemonius, Emil, M.D., of Berlin, at the house of his brother, in Bedford Street South, Liverpool, aged 33, on 10th September

Mason, Michael L., Esq., at 5, High Street, Newington, on 3rd September.

Morgan, John, Esq., Surgeon, late of Royal Artillery, at Ordnance Hospital, Dover, aged 71, on 4th September.

Power, William John, Esq., Surgeon, 91st Regiment, at Tipton, Staffordshire, aged 36, on 7th September.

Robertson, William, M.D., late Surgeon 12th Reg. of Foot, at Edinburgh, on 23rd July.

Roney, Cusach, M.D., in Dublin, aged 69, on 26th August.

Ross, John, Esq. H.E.I.C.S., Surgeon to the British Residency at Bagdad, on 19th June.

Scott, John, M.D., in Bedford Square, aged 66, on 30th July.

Scudamore, Sir Charles, M.D., at his residence, Wimpole Street, aged 69, on 4th August.

Tarleton, Edward, M.D., A.B., Physician to the Bath General Hospital, in Dublin, after a few days' illness, aged 40, on 10th September.

Thackeray, W. M., M.D., at Chester, at an advanced age, lately.

Udny, John, M.D., Surgeon Superintendent of the Cholera Hospital, Toxteth-Park, Liverpool, aged 53, on 24th August.

Wigton, George, M.D., at 14, Clerk Street, Edinburgh, on 21st August.

Williams, Joseph, Jun., Esq., at Bristol, of Cholera, aged 26, on 8th September.

Young, Robert, M.D., at Camberwell, of Cholera, aged 47, on 18th July.

BOOKS RECEIVED.

Alcock on Cholera. London: 1849. Annual Report of Chemistry. Part I. London: 1849. Annual Report (19th) of Belfast District Asylum. Belfast: 1849. Baddeley (Dr.) Harveian Oration. London: 1849. Billing's Principles of Medicine. London: 1849. Bird (Dr. James), Contributions to the Pathology of Cholera. London: 1849. Callaway on Dislocations, etc., of the Shoulder-joint. London: 1849. Gavin's Sanitary Ramblings. London: 1848. Journal of Public Health. Nos. I to XXIII. London: 1847-9. Lee (Dr. R.) on Nerves of the Heart. From Philosophical Transactions. London: 1849. Letter to the Lord Chancellor from Commissioners in Lunacy. London: 1849. Otto (Dr. C.) Ledekraad i Pharmakodynamiken. Christiania: 1847. Proceedings of Westminster Medical Society. London: 1849. Selmer, Almindelige Grundsætninger for Daarevæsnets Indretning. Kjobenhavn: 1846. Shapter, History of the Cholera in Exeter in 1832. London: 1849. Smith (Dr Thomas) on Hydrocephalus. London: 1845. Snow on the Mode of Communication of Cholera. London: 1849. Stephens on Cholera. London: 1849. Winslow, Cholera considered Psychologically. London: 1849.